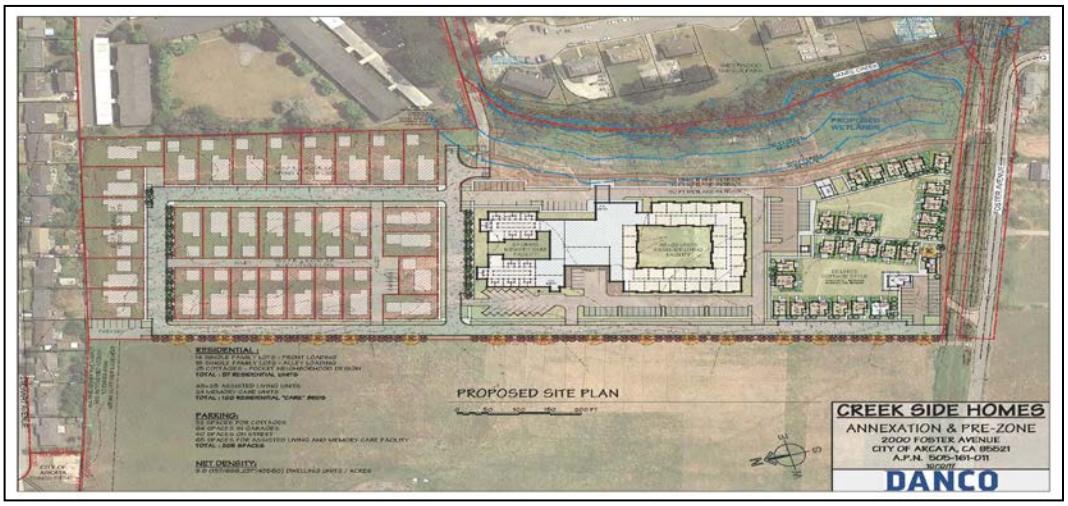
Creek Side Homes Project



Appendices A - O

Lead Agency:

City of Arcata Community Development Department

State Clearinghouse # 2016022083

June 2019

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Notice of Preparation

To: Office of Planning & Research
PO Box 3044
Sacramento, CA 95812-3044
(Address)

From: City of Arcata Community Dev
736 F Street
Arcata, CA 95521
(Address)

Subject: Notice of Preparation of a Draft Environmental Impact Report

The City of Arcata will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study (☐ is ☒ is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Alyson Hunter at the address shown above. We will need the name for a contact person in your agency.

Project Title: Creekside Annexation

Project Applicant, if any: Foster Avenue LLC

Date February 24, 2016

Signature Alyson Hunter

Title Senior Planner

Telephone 707-825-2040

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

APPENDIX A

CREEKSIDE HOMES ANNEXATION

Summary of Proposed Project

The project proposes the annexation, rezoning, and subdivision of parcel 505-161-011 for residential and assisted living development that would provide housing for approximately 287 residents. The proposed development of parcel 505-161-011 will generally consist of 32 single-family residential units and 32 second units, an assisted living and memory care facility with 100 units, 25 pocket neighborhood cottage units, a preserve and open space along Janes Creek, pedestrian/bicycle trails, and the development and dedication of public infrastructure. Other parcels where parts of the proposed development will occur include APNs 505-151-001, 505-151-009, 505-161-009, 505-161-028, 505-284-009, and 505-284-010. These parcels will be developed with a park, emergency access to Stewart Avenue and Wyatt Lane, and a pedestrian/bike trail accessing to Alliance Road (See Proposed Site Plan). The project will be administered subject to a Development Agreement between the applicant and the City of Arcata.

Site Description

The proposed project site is located at 2000 Foster Avenue on parcel 505-161-011; near the intersection of Foster Avenue and "Q" Street, adjacent to and southwest of the Westwood Neighborhood in the City of Arcata. Surrounding uses include residential development to the north and east, agricultural uses to the west, and a mix of residential and agricultural uses to the south. The site was used as a sawmill and whole-log chipping facility in the past, but has not been used for this purposes since the 1980's. The project site contains remnants of the former saw mill structure as well as the western bank of Janes Creek, riparian areas, fill materials and gravel, and vegetation including grasses, blackberry bushes, and other low growing shrubs.

Annexation & Rezoning

The project site is located within the City's Planning Area, Sphere of Influence, and Urban Services Boundary. The City of Arcata has designated the project site in the Arcata General Plan, and pre-zoned it as Residential - Medium Density (RM). The project proposes the annexation and rezoning of this 16-acre parcel. The other parcels in County jurisdiction where parts of the proposed development will occur are not proposed for annexation. Table 1 below lists the existing and proposed zoning for the project site (APN 505-161-011).

Table 1 Existing and Proposed Zoning

Parcel	Existing Zoning (County Jurisdiction)	Proposed Zoning (City Jurisdiction)
(APN 505-161-011) 16 Acres	ML (Limited Industrial) R-1 (Residential One Family) R4 (Apartment Professional)	RL (Residential - Low Density) RM (Residential - Medium Density) with PD (Planned Development) overlay

It is proposed for the northern 1/3 of the project site to be rezoned RL (Residential - Low Density) to allow development of the single-family residential units and second units and for the

southern 2/3 of the project site to be rezoned RM (Residential - Medium Density) with PD (Planned Development Overlay) to allow development of the assisted living facility and cottage units.

Residential Development & Subdivision

The project proposes a major subdivision of the project site (APN 505-161-011) which would require approval of a parcel map. The proposed project would generally split the northern 1/3 of the project site into individual lots that would be developed with single-family residential and second units. The southern 2/3 of the parcel would be split into two larger lots; one that would be developed with the assisted living and memory care facility and one with the pocket neighborhood cottages. Some of the single-family residential lots less are proposed to be less than the minimum lot width (60 feet) allowed in the RL zone. As stated in Section 9.24.040, the minimum lot width may be reduced to 30 feet where the review authority determines that a lesser proposed width is sufficient to ensure safe and adequate access and parking.

Single Family/Second Units

Single-family lots are proposed within the northern third of the project site (APN 505-161-011). The lots would vary in size from 5,000 s.f. to 6,400 s.f. and would be developed with 32 single family dwellings. All single family lots would include a garage, 28 of which would be detached and 4 that would be attached; 14 with front access and 18 with alley access. The proposed garages also have the potential to be developed into second units in the future which would provide 32 additional units on the single-family residential portion of the proposed development. Single family dwellings will be sold at market rates and will be accessed from streets constructed within the development.

Assisted Living and Memory Care Facility

The proposed assisted living and memory care facility would be located on a common lot in the central portion of the project site (APN 505-161-011) and would consist of 76 assisted living units and 24 memory care units. The facility will be accessed by streets constructed within the development and will have shared parking to the northeast and west of the development.

Cottages/Pocket Neighborhood

The proposed pocket neighborhood would be located in the southern portion of the project site (APN 505-161-011), adjacent to Foster Avenue and the proposed primary access. The cottages would share a common lot with parking provided in two areas to the northeast and southwest. The cottages pocket neighborhood would consist of 25 residential units in rows of individual cottages with shared parking, common walkways, gardens, lawns, and several common buildings. The units are proposed to be restricted to seniors and sold at market rates. These units will be accessed by streets/driveways constructed within the development.

Vehicular/Emergency Access

The proposed project would construct new streets and driveways to serve the development. The project would include public internal streets with the primary ingress/egress (entrance/exit) via Foster Avenue (on the west side of Janes Creek). The new roadway access onto Foster Avenue would be located near the southwestern corner of the project site (APN 505-161-011), approximately 500-feet west of the Foster and “Q” Street intersection. Vehicular access from the

proposed development to Alliance Road may occur from 17th Street or an extension of Foster Avenue over Janes Creek.

An emergency access road is proposed on parcel 505-151-001 to connect the project site with Stewart Avenue and Wyatt Lane. This all-weather emergency access would pass behind the existing neighborhood to the north, and would head west to access Stewart Avenue and Wyatt Lane through the City-owned property currently containing Ennes Park (APN 505-284-010). Removable bollards or other similar structures will be installed on both ends of the emergency access road to prevent non-emergency vehicular use.

Bicycle/Pedestrian Trails

The proposed project would construct new pedestrian/bicycle pathways to serve the development which are identified in the Arcata Pedestrian and Bicycle Master Plan (April 2010) including the following (See Proposed Site Plan):

- A pedestrian/bicycle pathway through parcel 505-161-028 is proposed for access to Alliance Road that would include a crossing over Janes Creek. The proposed crossing would include the replacement of an existing overcrossing located mid-way along the eastern boundary of the project site (APN 505-161-011). This crossing, formally known as Lumberyard Road would connect to an existing pedestrian trail that connects to Alliance Road adjacent to the Westwood Court apartments (north of the Heather Lane and Wisteria Lane cul-de-sacs).
- A pedestrian/bicycle access through the Foster Avenue right-of-way is proposed for access to Alliance Road that would include a crossing over Janes Creek. The proposed crossing would include the replacement of an existing overcrossing located in the southeast corner of the project site.
- A portion of the Hammond Trail is proposed to be constructed along the southern boundary of the project site directly south of the proposed cottage units. This Class I shared use pathway will be a minimum of 10 feet wide.
- A north south pathway is proposed on the southeastern portion of the project site that will connect the Hammond Trail with the Lumberyard Road pathway.
- The all-weather emergency access proposed to connect the project site with Stewart Avenue and Wyatt Lane will also function as a pedestrian/bicycle pathway.

Parking

As described above, the project proposes parking dispersed throughout the site. The site plan shows parking for the cottage style units will include 32 perpendicular off-street parking spaces and 9 parallel on-street parking spaces along the west side of the cottage neighborhood. The site plan shows parking for the assisted living and memory care facility will include 65 perpendicular and diagonal off-street parking spaces surrounding the facility and 8 parallel on-street parking spaces to the north of the facility. The site plan shows parking for the single family residential units will include 64 off-street parking spaces provided in garages (2 garage spaces per lot) and approximately 21 parallel on-street parking spaces along the frontage of the larger single-family lots. In addition, 6 parking spaces are proposed off of the east-west trending alley serving the

smaller single-family lots. In total 205 parking spaces are proposed for the project. Parking requirements will meet the City's development code standards.

Park Land & Other Open Space

As described above, an emergency access is proposed to connect the project site (APN 505-161-011) with Stewart Avenue and Wyatt Lane. This all-weather emergency access would pass behind the existing neighborhood to the north, and would head west to access Stewart Avenue and Wyatt Lane through the 0.21 acre property currently containing Ennes Park (APN 505-284-010). To replace Ennes Park as well as provide the parkland required to accommodate the proposed residential development (287 residents), a new approximately 1.65 acre park will be provided on a portion of City-owned parcel 505-151-009, west of where Ennes Park is currently located.

The proposed development also includes open space along Janes Creek. An open space area is proposed adjacent to Janes Creek and within the Janes Creek 100 foot streamside protection buffer (on the southeastern side of the site). This area would include the proposed constructed wetlands (See description below of wetland mitigation area).

Floodplain

According to the Flood Insurance Rate Map (Community Panel Number 060061 0002 E; Revised Nov. 5, 1997), the 100-year floodplain for Janes Creek covers a portion of the project site (APN 505-161-011). The project proposes modifications within the Janes Creek floodplain to improve creek flows and remove existing obstructions. The project proposes to replace two existing culverts in Janes Creek. Both culverts are proposed to be replaced with open bottom arch pipe crossings which are intended to improve creek flow capacities and improve biological functions. One of the culvert replacements is proposed at what is referred to as the Foster Avenue crossing which is located in the southeastern corner of the project site. The other culvert replacement is proposed at what is referred to as the Lumberyard Road crossing which is located mid-way along the eastern boundary of the project site.

The report "Updated Hydraulic Analysis of Janes Creek" prepared by Domenichelli & Associates, states that the proposed culverts (i.e. arch culverts, with a minimum eight foot span and six foot rise at "Foster Road crossing," and a minimum 10 foot span and five foot rise at "Lumberyard Road" crossing) would: "…result in minimal changes to the FEMA floodplain elevations. Any changes in water surface elevation would occur only in the direct vicinity and upstream of the crossings. Any changes made at either the Lumberyard Road or the Foster Avenue crossing would have no affect on the 17th Street crossing" (March 28, 2005).

Wetland Mitigation Area

The area from the Janes Creek centerline to 100 feet out from the creek's top-of-bank is a protected buffer area, to be designated as a Wetland and Creek Protection (WCP) Zone as defined in the Arcata General Plan. The project proposes to include within the protection zone (or "buffer") a wetland mitigation area. The buffer would be planted with native vegetation, in areas where native vegetation is not already established, and provide natural shade within the creek corridor.

The project site (APN 505-161-011) contains a number of wetlands and a ditch along the southern boundary of the site as well as the Janes Creek corridor. However, many of these wetlands are relatively small and isolated, and therefore lack conditions to form significant biological habitat that would support measurable wildlife. To pursue the development objectives of the project, the project proposes to fill some of the existing wetlands and mitigate the loss on the project site with a 1.8:1 replacement ratio and 3:1 side slopes (i.e., a ratio of 1.8 acres of replacement wetland for each acre filled/impacted). A total of approximately 0.47 acres (20,285 square feet) of wetlands would be filled for proposed site development. The project's Wetland Mitigation and Monitoring Plan (Winzler & Kelly, 2006) proposes to create 0.85 acres (34,040 square feet) of consolidated wetlands (0.8 acres of mitigation area) to be combined along Janes Creek in the southeastern corner of the project site.

The applicant proposes wetland construction that will mitigate for filled wetlands and will create wetlands of higher biological value/aquatic functions than those filled. Additionally, the proposed constructed wetland, as described in the Wetland Mitigation and Monitoring Plan (Winzler & Kelly, August 2006), will be designed to enhance/convert a compacted area of aggregate base near Janes Creek into a palustrine wetland habitat adjacent to existing wetland/riparian associated with Janes Creek. "Created/Restored Habitat" (Page 7 of the Wetland Mitigation and Monitoring Plan) describes the enhancement and improved biological function/value of the proposed constructed wetlands. Palustrine habitats created the first year will be available immediately for wildlife use. The palustrine seasonal habitat is projected by the applicant's biologists to mature in approximately three to five years. The riparian trees area is intended to provide habitat for land birds and other wildlife in approximately three to ten years. The mitigation area is intended to widen the wildlife corridor through the project area.

The wetland mitigation site has been designed by the applicant to comply with City of Arcata General Plan Policy RC-3 (Wetlands Management) to enhance wetland function with equal or greater functional capacity and value than the proposed filled wetlands. The wetlands proposed for fill are impoundments in compacted fill and aggregate material on a former mill site. Former wetlands prior to mill use, if any existed at the site, would more than likely have been similar to open palustrine field. The proposed wetlands are designed to be of higher functional capacity than those presently existing at the site and will include multiple habitat types (both palustrine emergent and riparian species proposed in the planting plan).

According to applicant information the grading plan for the mitigation site is designed to provide off-channel habitat during storm conditions, provide hydrologic connection with the creek, and prevent fish entrapment by design. Given the type of wetlands filled, the adjacent riparian and creek habitat, and the multiple benefits and habitat types proposed for the mitigation wetlands, the plan as proposed is intended to fulfill requirements of General Plan Policy RC-3 (Wetland Management). The U.S. Army Corp of Engineers (ACOE) typically requires replacement of wetlands of equal habitat type, with equal or greater value. A palustrine type wetland is proposed to meet ACOE requirements. The combination of palustrine wetland species with willows, alders, big leaf maples, cedars, and spruces on the 3:1 slope areas will provide a combination of habitat types. The ACOE also requires replacement wetlands to include palustrine hydrology and thus requires grading to provide adequate groundwater.

Stormwater

Stormwater facilities will be designed to meet both the Phase II Small MS4 General Permit requirements as well as the Construction General Permit requirements of the State Water Resources Control Board (SWRCB). This will include the on-site retention of stormwater on the project site through low impact development (LID) improvements such as rain gardens, bioswales, and permeable parking areas. This also may include the development of a detention basin in the 100-foot Wetland and Creek Protection Zone for excess stormwater runoff that is not captured through on-site retention during peak storm events. Similar to the wetland mitigation area, the detention basin would be designed to overflow to Janes Creek. Additionally, some of the site runoff may be directed to the adjacent agricultural parcel (APN 505-151-001) to the west of the project site (APN 505-161-011).

Utilities

Proposed development of the project site (APN 505-161-011) would include provision of site utilities. All utilities (water, sewer, gas, electricity, and telecommunications services) are located adjacent to the site and would be extended underground to serve the proposed development. The City of Arcata, through its solid waste disposal contractor, would collect solid waste and recyclables.

Project Studies

Additional studies that have been or will be completed for the proposed project include:

Biological Report
Cultural Resources Investigation
Drainage Report
Emissions Modeling
Fiscal Impact Analysis
Hazardous Materials Investigation & Remediation Plan
Soils Report
Traffic Impact Study
Wetland Mitigation and Monitoring Plan
Wetland Delineation

APPENDIX B

Creekside Annex EIR Scoping Meeting Notes – March 10, 2015 – 9:30 AM

Attendance:

Streamline Consulting (4)
Chris Dart, Danco
Julie Neander (Arcata ES)
Mark Andre (Arcata ES)
Erik Lust (Arcata ES)
Alyson Hunter (Arcata ComDev)
Larry Oetker (Arcata ComDev)
Netra Khatri (Arcata Engineering)
Dalene Whitlock (W-Trans Traffic Consultant)
Kevin Tucker (Caltrans Planning)
Jennifer Olsen (CDFW)
Mark Verhey (Hum CO DEH)
Michael Le Grand (Hum Co P/W)
Bill Rich (Cultural Resources Consultant)
Erika Cooper (Bear River THPO)
Janet Eidsness (BL THPO)
Colette Metz (LAFCo)

Comments:

1. Biology – Discussion on allowed development within creek setback, ESHA, detention facilities and appropriate design, variable width setbacks may be appropriate, flood zone issues, LID, 1600 permit required for streambed alterations
2. Traffic – Danco will enter into a supplemental contract with W-Trans to address project-specific intersections (to accompany City's comprehensive Sunset area study just beginning) and analyze both vehicular crossing of Janes Creek at the Foster bend in the road, as well as vehicular access via 17th/Q/Foster without the creek crossing; ped/bike access; RR ROW as non-motorized access and potential connection to Hammond Trail (PCBR); Hum Co P/W is recommending that City include additional area in annexation in order to control public road requirements
3. Annex in general – the subject property is within the USB; LAFCo may recommend that City try to annex the 4 properties to the south in order to avoid creating an island of County surrounded by City. Director Oetker said that it's not the City's practice to try to force annexation on properties that don't explicitly request it; Danco application to include annex of city park property to the NW of subject site
4. Water/Sewer – there may be onsite water storage requirements; City underway on sewer flow testing now; I&I; City will encourage graywater usage wherever possible; Facilities Plan going to Council on 4/20 – will have more detail on WWTP capacity availability and may result in mitigation impact fee program under which this project would be expected to contribute; Netra will need water/sewer loading calcs; assisted living facility will have commercial kitchen (grease trap, pre-treat, etc)
5. THPO – need to get Bill any soils reports that indicate depth of disturbance associated with site development; any ACOE 404 permits will trigger Section 106 review – Garry to provide past documentation; inadvertent discovery as COA
6. Development Agreement – Streamline to begin drafting based on latest to be provided by Alyson

APPENDIX B

7. HazMat – Hum Co DEH recommends having Soil Management Safety and contingency plans in place in order to protect workers in event of discovered contamination; site has closed RWQCB case and RWQCB is the oversight agency for any contamination; be prepared to conduct pre-characterization; Garry mentioned that soils under concrete slabs are unknown at this point and further testing will be conducted once removed

Creek Side Homes

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	64.00	Dwelling Unit	6.26	53,000.00	136
Congregate Care (Assisted Living)	100.00	Dwelling Unit	5.49	80,000.00	100
Condo/Townhouse	25.00	Dwelling Unit	4.23	19,000.00	33
City Park	1.56	Acre	1.56	3,500.00	0
User Defined Recreational	0.62	User Defined Unit	0.62	0.00	0
Other Asphalt Surfaces	0.14	Acre	0.14	0.00	0
Other Non-Asphalt Surfaces	0.45	Acre	0.45	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - The Utility Information does not take into account that the project will be automatically enrolled in the RCEA CCE Program which procures approximately 42 percent of its power from renewable and carbon-free sources.

Land Use - Lot ac. from Tent. Parcel Map. S.F. of structures from Site Plan. Population est. from Fiscal Impact Analysis. 1.56 ac. of park is from park in-lieu fees that will be paid by the applicant. Assumed park will have 3,500 s.f. of structures. User defined recreational is for 0.62 ac. of paved ped/bike trails. Other asphalt surfaces is for the extension of Foster Ave. Other non-asphalt surfaces is for the emergency access road.

Construction Phase - Construction schedule assumes full buildout in 26 months. Number of construction days provided by applicant. Demolition is for removal of remaining mill structures. Site Prep-Grading also includes haz. materials remediation, Foster Ave. extension, park development, construction of wetland mitigation area, replacement of culverts, and stormwater features. Trenching is for extension of utilities. Paving also includes ped/bike trails and Foster Ave. extension.

Off-road Equipment - Trenching will involve the installation of utilities to serve the development. Assumed that 1 backhoe and 1 excavator will be required to complete this task within the 20 day period.

Off-road Equipment -

Grading - Assumed that the approximately 18.75 acre area would be passed over twice during site preparation. Based on site conditions and relatively flat topography, included 8,000 cy of import/export for grading.

Demolition - Demolition assumes 800 tons of debris which includes the removal of remnant structures from the former lumber mill site consisting primarily of concrete pads, a concrete ramp, metal, and other miscellaneous debris.

Architectural Coating -

Vehicle Trips - The Condo/Townhouses will be senior restricted neighborhood cottage units. As such the weekday trip rates for these units were reduced to 3.48 trips/day consistent with the Trip Generation Rates from the 8th Edition ITE Trip Generation Report for 'Elderly Housing - Attached.' Accordingly, the Sat. and Sun. trip rates for the Condo/Townhouses were also reduced by approximately 40%.

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating -

Energy Use -

Sequestration - A minimum of 300 trees of various native and/or drought tolerant species would be planted throughout the residential development site (505-161 -011).

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - The City of Arcata Plaza and Downtown area is approximatley 1 mile from the project site. The Arcata Transit Station is approximatley 1.15 miles from the project site. The project will include sidewalks and trails within the project site and several ped/bike pathways that will connect the project site to the City's existing trail system, nearby neighborhoods, transit facilities, and the Downtown area.

Area Mitigation - No woodstoves or fireplaces are proposed for the residential units and assisted living facility. All units will have forced air gas or electric heating. Low VOC paints will be used for the project that have a maximum VOC standard of 50 g/L.

Energy Mitigation - The proposed project will be subject to City of Arcata Ordinance No. 1507 (Residential Reach Code) that requires new residential buildings to be designed and constructed to exceed minimum 2016 Title 24, Part 6 Building Energy Efficiency Standards by at least 20%.

Water Mitigation - The applicant proposes to install low flow plumbing fixtures in the proposed residential units and assisted living facility. To reduce outdoor water use for landscaping, it is proposed to install native and drought tolerant plant species that do not require irrigation at the assisted living facility and senior restricted cottage units.

Waste Mitigation - The development would include recycling services which is estimated to reduce solid waste generation by a minimum of 35%.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
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tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
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tblConstructionPhase	NumDays	300.00	370.00
tblConstructionPhase	NumDays	30.00	70.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	PhaseEndDate	4/30/2019	7/6/2021
tblConstructionPhase	PhaseEndDate	4/30/2019	3/2/2021
tblConstructionPhase	PhaseEndDate	4/30/2019	5/28/2019
tblConstructionPhase	PhaseEndDate	4/30/2019	10/1/2019
tblConstructionPhase	PhaseEndDate	4/30/2019	5/25/2021
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tblGrading	AcresOfGrading	0.00	37.50

tblGrading	MaterialExported	0.00	8,000.00
tblGrading	MaterialImported	0.00	8,000.00
tblLandUse	BuildingSpaceSquareFeet	115,200.00	53,000.00
tblLandUse	BuildingSpaceSquareFeet	100,000.00	80,000.00
tblLandUse	BuildingSpaceSquareFeet	25,000.00	19,000.00
tblLandUse	BuildingSpaceSquareFeet	0.00	3,500.00
tblLandUse	BuildingSpaceSquareFeet	6,098.40	0.00
tblLandUse	BuildingSpaceSquareFeet	19,602.00	0.00
tblLandUse	GreenSpaceSquareFeet	67,953.60	0.00
tblLandUse	LandUseSquareFeet	115,200.00	53,000.00
tblLandUse	LandUseSquareFeet	100,000.00	80,000.00
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tblLandUse	LandUseSquareFeet	67,953.60	3,500.00
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tblLandUse	LotAcreage	20.78	6.26
tblLandUse	LotAcreage	6.25	5.49
tblLandUse	LotAcreage	1.56	4.23
tblLandUse	LotAcreage	0.00	0.62
tblLandUse	Population	183.00	136.00
tblLandUse	Population	286.00	100.00
tblLandUse	Population	72.00	33.00
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	OperationalYear	2018	2021
tblSequestration	NumberOfNewTrees	0.00	300.00
tblVehicleTrips	ST_TR	5.67	3.40

tblVehicleTrips	SU_TR	4.84	2.90
tblVehicleTrips	WD_TR	5.81	3.48

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3792	3.9179	2.5783	5.2300e-003	0.5188	0.1710	0.6898	0.2388	0.1585	0.3973	0.0000	472.8464	472.8464	0.1071	0.0000	475.5247
2020	0.4170	2.9924	3.2189	5.4900e-003	0.1338	0.1499	0.2837	0.0361	0.1410	0.1770	0.0000	483.8138	483.8138	0.0854	0.0000	485.9492
2021	2.5189	0.7736	0.9199	1.5300e-003	0.0273	0.0382	0.0655	7.3500e-003	0.0357	0.0430	0.0000	134.8185	134.8185	0.0296	0.0000	135.5592
Maximum	**2.5189**	**3.9179**	**3.2189**	**5.4900e-003**	**0.5188**	**0.1710**	**0.6898**	**0.2388**	**0.1585**	**0.3973**	**0.0000**	**483.8138**	**483.8138**	**0.1071**	**0.0000**	**485.9492**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3792	3.9179	2.5783	5.2300e-003	0.2655	0.1710	0.4365	0.1161	0.1585	0.2746	0.0000	472.8460	472.8460	0.1071	0.0000	475.5243
2020	0.4170	2.9924	3.2189	5.4900e-003	0.1338	0.1499	0.2837	0.0361	0.1410	0.1770	0.0000	483.8135	483.8135	0.0854	0.0000	485.9489
2021	2.5189	0.7736	0.9199	1.5300e-003	0.0273	0.0382	0.0655	7.3500e-003	0.0357	0.0430	0.0000	134.8184	134.8184	0.0296	0.0000	135.5591
Maximum	**2.5189**	**3.9179**	**3.2189**	**5.4900e-003**	**0.2655**	**0.1710**	**0.4365**	**0.1161**	**0.1585**	**0.2746**	**0.0000**	**483.8135**	**483.8135**	**0.1071**	**0.0000**	**485.9489**

Creek Side Homes - Humboldt County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**37.26**	**0.00**	**24.38**	**43.46**	**0.00**	**19.87**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-1-2019**	**7-31-2019**	1.8125	1.8125
2	**8-1-2019**	**10-31-2019**	1.8610	1.8610
3	**11-1-2019**	**1-31-2020**	0.9200	0.9200
4	**2-1-2020**	**4-30-2020**	0.8400	0.8400
5	**5-1-2020**	**7-31-2020**	0.8505	0.8505
6	**8-1-2020**	**10-31-2020**	0.8546	0.8546
7	**11-1-2020**	**1-31-2021**	0.8368	0.8368
8	**2-1-2021**	**4-30-2021**	0.4609	0.4609
9	**5-1-2021**	**7-31-2021**	2.5776	2.5776
		Highest	2.5776	2.5776

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	12.7508	0.2478	16.0451	0.0266		2.0602	2.0602		2.0602	2.0602	195.2290	84.1686	279.3976	0.1824	0.0154	288.5334
Energy	8.6400e-003	0.0738	0.0314	4.7000e-004		5.9700e-003	5.9700e-003		5.9700e-003	5.9700e-003	0.0000	449.6186	449.6186	0.0181	4.9700e-003	451.5534
Mobile	0.5444	3.0596	6.4058	0.0141	1.0036	0.0199	1.0235	0.2705	0.0188	0.2894	0.0000	1,286.7282	1,286.7282	0.0743	0.0000	1,288.5858
Waste						0.0000	0.0000		0.0000	0.0000	33.0307	0.0000	33.0307	1.9521	0.0000	81.8321
Water						0.0000	0.0000		0.0000	0.0000	3.9067	29.1809	33.0876	0.4026	9.7500e-003	46.0567
Total	**13.3039**	**3.3813**	**22.4823**	**0.0411**	**1.0036**	**2.0862**	**3.0897**	**0.2705**	**2.0851**	**2.3556**	**232.1664**	**1,849.6963**	**2,081.8627**	**2.6294**	**0.0301**	**2,156.5614**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6983	0.0162	1.4064	7.0000e-005		7.7500e-003	7.7500e-003		7.7500e-003	7.7500e-003	0.0000	2.2924	2.2924	2.2200e-003	0.0000	2.3479
Energy	7.2400e-003	0.0618	0.0263	3.9000e-004		5.0000e-003	5.0000e-003		5.0000e-003	5.0000e-003	0.0000	424.6011	424.6011	0.0173	4.6200e-003	426.4097
Mobile	0.5192	2.8188	5.8566	0.0125	0.8852	0.0178	0.9030	0.2386	0.0168	0.2555	0.0000	1,147.4679	1,147.4679	0.0684	0.0000	1,149.1789
Waste						0.0000	0.0000		0.0000	0.0000	21.4700	0.0000	21.4700	1.2688	0.0000	53.1909
Water						0.0000	0.0000		0.0000	0.0000	3.1254	24.7065	27.8319	0.3221	7.8100e-003	38.2125
Total	**1.2248**	**2.8969**	**7.2893**	**0.0130**	**0.8852**	**0.0306**	**0.9157**	**0.2386**	**0.0296**	**0.2682**	**24.5953**	**1,599.0679**	**1,623.6632**	**1.6790**	**0.0124**	**1,669.3399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**90.79**	**14.33**	**67.58**	**68.39**	**11.80**	**98.53**	**70.36**	**11.80**	**98.58**	**88.61**	**89.41**	**13.55**	**22.01**	**36.15**	**58.68**	**22.59**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	212.4000
Total	**212.4000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	5/26/2021	7/6/2021	5	30	
2	Building Construction	Building Construction	10/2/2019	3/2/2021	5	370	
3	Demolition	Demolition	5/1/2019	5/28/2019	5	20	
4	Grading	Grading	6/26/2019	10/1/2019	5	70	
5	Paving	Paving	3/31/2021	5/25/2021	5	40	
6	Site Preparation	Site Preparation	5/29/2019	6/25/2019	5	20	
7	Trenching	Trenching	3/3/2021	3/30/2021	5	20	

Acres of Grading (Site Preparation Phase): 37.5

Acres of Grading (Grading Phase): 75

Acres of Paving: 0.59

Residential Indoor: 307,800; Residential Outdoor: 102,600; Non-Residential Indoor: 5,250; Non-Residential Outdoor: 1,750; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	115.00	21.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	79.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	2,000.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4183					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2800e-003	0.0229	0.0273	4.0000e-005		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	3.8299	3.8299	2.6000e-004	0.0000	3.8365
Total	**2.4216**	**0.0229**	**0.0273**	**4.0000e-005**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**3.8299**	**3.8299**	**2.6000e-004**	**0.0000**	**3.8365**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-003	2.3200e-003	0.0188	3.0000e-005	2.6600e-003	3.0000e-005	2.6900e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	2.3932	2.3932	1.6000e-004	0.0000	2.3972
Total	**2.7000e-003**	**2.3200e-003**	**0.0188**	**3.0000e-005**	**2.6600e-003**	**3.0000e-005**	**2.6900e-003**	**7.1000e-004**	**2.0000e-005**	**7.3000e-004**	**0.0000**	**2.3932**	**2.3932**	**1.6000e-004**	**0.0000**	**2.3972**

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4183					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2800e-003	0.0229	0.0273	4.0000e-005		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	3.8299	3.8299	2.6000e-004	0.0000	3.8365
Total	**2.4216**	**0.0229**	**0.0273**	**4.0000e-005**		**1.4100e-003**	**1.4100e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**3.8299**	**3.8299**	**2.6000e-004**	**0.0000**	**3.8365**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-003	2.3200e-003	0.0188	3.0000e-005	2.6600e-003	3.0000e-005	2.6900e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	2.3932	2.3932	1.6000e-004	0.0000	2.3972
Total	**2.7000e-003**	**2.3200e-003**	**0.0188**	**3.0000e-005**	**2.6600e-003**	**3.0000e-005**	**2.6900e-003**	**7.1000e-004**	**2.0000e-005**	**7.3000e-004**	**0.0000**	**2.3932**	**2.3932**	**1.6000e-004**	**0.0000**	**2.3972**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0767	0.6851	0.5578	8.7000e-004		0.0419	0.0419		0.0394	0.0394	0.0000	76.4089	76.4089	0.0186	0.0000	76.8742
Total	**0.0767**	**0.6851**	**0.5578**	**8.7000e-004**		**0.0419**	**0.0419**		**0.0394**	**0.0394**	**0.0000**	**76.4089**	**76.4089**	**0.0186**	**0.0000**	**76.8742**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9700e-003	0.1012	0.0307	1.9000e-004	4.3800e-003	9.7000e-004	5.3400e-003	1.2700e-003	9.3000e-004	2.1900e-003	0.0000	18.1202	18.1202	1.0000e-003	0.0000	18.1452
Worker	0.0323	0.0303	0.2469	3.1000e-004	0.0288	3.1000e-004	0.0291	7.6800e-003	2.9000e-004	7.9700e-003	0.0000	27.3527	27.3527	2.1500e-003	0.0000	27.4063
Total	**0.0373**	**0.1316**	**0.2776**	**5.0000e-004**	**0.0332**	**1.2800e-003**	**0.0345**	**8.9500e-003**	**1.2200e-003**	**0.0102**	**0.0000**	**45.4728**	**45.4728**	**3.1500e-003**	**0.0000**	**45.5516**

3.3 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0767	0.6851	0.5578	8.7000e-004		0.0419	0.0419		0.0394	0.0394	0.0000	76.4088	76.4088	0.0186	0.0000	76.8741
Total	**0.0767**	**0.6851**	**0.5578**	**8.7000e-004**		**0.0419**	**0.0419**		**0.0394**	**0.0394**	**0.0000**	**76.4088**	**76.4088**	**0.0186**	**0.0000**	**76.8741**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9700e-003	0.1012	0.0307	1.9000e-004	4.3800e-003	9.7000e-004	5.3400e-003	1.2700e-003	9.3000e-004	2.1900e-003	0.0000	18.1202	18.1202	1.0000e-003	0.0000	18.1452
Worker	0.0323	0.0303	0.2469	3.1000e-004	0.0288	3.1000e-004	0.0291	7.6800e-003	2.9000e-004	7.9700e-003	0.0000	27.3527	27.3527	2.1500e-003	0.0000	27.4063
Total	**0.0373**	**0.1316**	**0.2776**	**5.0000e-004**	**0.0332**	**1.2800e-003**	**0.0345**	**8.9500e-003**	**1.2200e-003**	**0.0102**	**0.0000**	**45.4728**	**45.4728**	**3.1500e-003**	**0.0000**	**45.5516**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4091	303.4091	0.0740	0.0000	305.2596
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4091**	**303.4091**	**0.0740**	**0.0000**	**305.2596**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.3678	0.1048	7.7000e-004	0.0176	2.3700e-003	0.0200	5.1100e-003	2.2700e-003	7.3800e-003	0.0000	72.9182	72.9182	3.6200e-003	0.0000	73.0087
Worker	0.1236	0.1113	0.9069	1.2000e-003	0.1162	1.1900e-003	0.1174	0.0310	1.1000e-003	0.0321	0.0000	107.4865	107.4865	7.7800e-003	0.0000	107.6809
Total	**0.1393**	**0.4790**	**1.0117**	**1.9700e-003**	**0.1338**	**3.5600e-003**	**0.1374**	**0.0361**	**3.3700e-003**	**0.0395**	**0.0000**	**180.4047**	**180.4047**	**0.0114**	**0.0000**	**180.6896**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2777	2.5134	2.2072	3.5300e-003		0.1463	0.1463		0.1376	0.1376	0.0000	303.4087	303.4087	0.0740	0.0000	305.2592
Total	**0.2777**	**2.5134**	**2.2072**	**3.5300e-003**		**0.1463**	**0.1463**		**0.1376**	**0.1376**	**0.0000**	**303.4087**	**303.4087**	**0.0740**	**0.0000**	**305.2592**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.3678	0.1048	7.7000e-004	0.0176	2.3700e-003	0.0200	5.1100e-003	2.2700e-003	7.3800e-003	0.0000	72.9182	72.9182	3.6200e-003	0.0000	73.0087
Worker	0.1236	0.1113	0.9069	1.2000e-003	0.1162	1.1900e-003	0.1174	0.0310	1.1000e-003	0.0321	0.0000	107.4865	107.4865	7.7800e-003	0.0000	107.6809
Total	**0.1393**	**0.4790**	**1.0117**	**1.9700e-003**	**0.1338**	**3.5600e-003**	**0.1374**	**0.0361**	**3.3700e-003**	**0.0395**	**0.0000**	**180.4047**	**180.4047**	**0.0114**	**0.0000**	**180.6896**

3.3 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0409	0.3748	0.3564	5.8000e-004		0.0206	0.0206		0.0194	0.0194	0.0000	49.8020	49.8020	0.0120	0.0000	50.1024
Total	**0.0409**	**0.3748**	**0.3564**	**5.8000e-004**		**0.0206**	**0.0206**		**0.0194**	**0.0194**	**0.0000**	**49.8020**	**49.8020**	**0.0120**	**0.0000**	**50.1024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-003	0.0557	0.0150	1.3000e-004	2.8900e-003	2.4000e-004	3.1300e-003	8.4000e-004	2.3000e-004	1.0600e-003	0.0000	11.9004	11.9004	5.7000e-004	0.0000	11.9147
Worker	0.0193	0.0166	0.1350	1.9000e-004	0.0191	1.9000e-004	0.0193	5.0800e-003	1.7000e-004	5.2500e-003	0.0000	17.1510	17.1510	1.1500e-003	0.0000	17.1797
Total	**0.0215**	**0.0723**	**0.1500**	**3.2000e-004**	**0.0220**	**4.3000e-004**	**0.0224**	**5.9200e-003**	**4.0000e-004**	**6.3100e-003**	**0.0000**	**29.0513**	**29.0513**	**1.7200e-003**	**0.0000**	**29.0944**

3.3 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0409	0.3748	0.3564	5.8000e-004		0.0206	0.0206		0.0194	0.0194	0.0000	49.8020	49.8020	0.0120	0.0000	50.1023
Total	**0.0409**	**0.3748**	**0.3564**	**5.8000e-004**		**0.0206**	**0.0206**		**0.0194**	**0.0194**	**0.0000**	**49.8020**	**49.8020**	**0.0120**	**0.0000**	**50.1023**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-003	0.0557	0.0150	1.3000e-004	2.8900e-003	2.4000e-004	3.1300e-003	8.4000e-004	2.3000e-004	1.0600e-003	0.0000	11.9004	11.9004	5.7000e-004	0.0000	11.9147
Worker	0.0193	0.0166	0.1350	1.9000e-004	0.0191	1.9000e-004	0.0193	5.0800e-003	1.7000e-004	5.2500e-003	0.0000	17.1510	17.1510	1.1500e-003	0.0000	17.1797
Total	**0.0215**	**0.0723**	**0.1500**	**3.2000e-004**	**0.0220**	**4.3000e-004**	**0.0224**	**5.9200e-003**	**4.0000e-004**	**6.3100e-003**	**0.0000**	**29.0513**	**29.0513**	**1.7200e-003**	**0.0000**	**29.0944**

3.4 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.5600e-003	0.0000	8.5600e-003	1.3000e-003	0.0000	1.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8672
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**8.5600e-003**	**0.0180**	**0.0265**	**1.3000e-003**	**0.0167**	**0.0180**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8672**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.5000e-004	0.0141	2.4800e-003	3.0000e-005	6.5000e-004	9.0000e-005	7.4000e-004	1.8000e-004	9.0000e-005	2.7000e-004	0.0000	3.0277	3.0277	1.0000e-004	0.0000	3.0302
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	1.2200e-003	9.9100e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1700e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0978	1.0978	9.0000e-005	0.0000	1.0999
Total	**1.7500e-003**	**0.0153**	**0.0124**	**4.0000e-005**	**1.8100e-003**	**1.0000e-004**	**1.9100e-003**	**4.9000e-004**	**1.0000e-004**	**5.9000e-004**	**0.0000**	**4.1254**	**4.1254**	**1.9000e-004**	**0.0000**	**4.1301**

3.4 Demolition - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.8500e-003	0.0000	3.8500e-003	5.8000e-004	0.0000	5.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8671
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**3.8500e-003**	**0.0180**	**0.0218**	**5.8000e-004**	**0.0167**	**0.0173**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.5000e-004	0.0141	2.4800e-003	3.0000e-005	6.5000e-004	9.0000e-005	7.4000e-004	1.8000e-004	9.0000e-005	2.7000e-004	0.0000	3.0277	3.0277	1.0000e-004	0.0000	3.0302
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-003	1.2200e-003	9.9100e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1700e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0978	1.0978	9.0000e-005	0.0000	1.0999
Total	**1.7500e-003**	**0.0153**	**0.0124**	**4.0000e-005**	**1.8100e-003**	**1.0000e-004**	**1.9100e-003**	**4.9000e-004**	**1.0000e-004**	**5.9000e-004**	**0.0000**	**4.1254**	**4.1254**	**1.9000e-004**	**0.0000**	**4.1301**

3.5 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2515	0.0000	0.2515	0.1203	0.0000	0.1203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1659	1.9082	1.1682	2.1700e-003		0.0834	0.0834		0.0767	0.0767	0.0000	194.9546	194.9546	0.0617	0.0000	196.4967
Total	**0.1659**	**1.9082**	**1.1682**	**2.1700e-003**	**0.2515**	**0.0834**	**0.3348**	**0.1203**	**0.0767**	**0.1970**	**0.0000**	**194.9546**	**194.9546**	**0.0617**	**0.0000**	**196.4967**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0114	0.3571	0.0629	8.1000e-004	0.0165	2.3500e-003	0.0188	4.5200e-003	2.2500e-003	6.7800e-003	0.0000	76.6494	76.6494	2.5500e-003	0.0000	76.7132
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0500e-003	5.6800e-003	0.0462	6.0000e-005	5.4000e-003	6.0000e-005	5.4600e-003	1.4400e-003	5.0000e-005	1.4900e-003	0.0000	5.1229	5.1229	4.0000e-004	0.0000	5.1330
Total	**0.0175**	**0.3628**	**0.1091**	**8.7000e-004**	**0.0219**	**2.4100e-003**	**0.0243**	**5.9600e-003**	**2.3000e-003**	**8.2700e-003**	**0.0000**	**81.7723**	**81.7723**	**2.9500e-003**	**0.0000**	**81.8462**

3.5 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1132	0.0000	0.1132	0.0541	0.0000	0.0541	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1659	1.9082	1.1682	2.1700e-003		0.0834	0.0834		0.0767	0.0767	0.0000	194.9544	194.9544	0.0617	0.0000	196.4964
Total	**0.1659**	**1.9082**	**1.1682**	**2.1700e-003**	**0.1132**	**0.0834**	**0.1965**	**0.0541**	**0.0767**	**0.1309**	**0.0000**	**194.9544**	**194.9544**	**0.0617**	**0.0000**	**196.4964**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0114	0.3571	0.0629	8.1000e-004	0.0165	2.3500e-003	0.0188	4.5200e-003	2.2500e-003	6.7800e-003	0.0000	76.6494	76.6494	2.5500e-003	0.0000	76.7132
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0500e-003	5.6800e-003	0.0462	6.0000e-005	5.4000e-003	6.0000e-005	5.4600e-003	1.4400e-003	5.0000e-005	1.4900e-003	0.0000	5.1229	5.1229	4.0000e-004	0.0000	5.1330
Total	**0.0175**	**0.3628**	**0.1091**	**8.7000e-004**	**0.0219**	**2.4100e-003**	**0.0243**	**5.9600e-003**	**2.3000e-003**	**8.2700e-003**	**0.0000**	**81.7723**	**81.7723**	**2.9500e-003**	**0.0000**	**81.8462**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.2584	0.2931	4.6000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	40.0470	40.0470	0.0130	0.0000	40.3708
Paving	1.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0253**	**0.2584**	**0.2931**	**4.6000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**40.0470**	**40.0470**	**0.0130**	**0.0000**	**40.3708**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3500e-003	2.0100e-003	0.0164	2.0000e-005	2.3100e-003	2.0000e-005	2.3400e-003	6.2000e-004	2.0000e-005	6.4000e-004	0.0000	2.0810	2.0810	1.4000e-004	0.0000	2.0845
Total	**2.3500e-003**	**2.0100e-003**	**0.0164**	**2.0000e-005**	**2.3100e-003**	**2.0000e-005**	**2.3400e-003**	**6.2000e-004**	**2.0000e-005**	**6.4000e-004**	**0.0000**	**2.0810**	**2.0810**	**1.4000e-004**	**0.0000**	**2.0845**

3.6 Paving - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.2584	0.2931	4.6000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	40.0469	40.0469	0.0130	0.0000	40.3707
Paving	1.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0253**	**0.2584**	**0.2931**	**4.6000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**40.0469**	**40.0469**	**0.0130**	**0.0000**	**40.3707**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3500e-003	2.0100e-003	0.0164	2.0000e-005	2.3100e-003	2.0000e-005	2.3400e-003	6.2000e-004	2.0000e-005	6.4000e-004	0.0000	2.0810	2.0810	1.4000e-004	0.0000	2.0845
Total	**2.3500e-003**	**2.0100e-003**	**0.0164**	**2.0000e-005**	**2.3100e-003**	**2.0000e-005**	**2.3400e-003**	**6.2000e-004**	**2.0000e-005**	**6.4000e-004**	**0.0000**	**2.0810**	**2.0810**	**1.4000e-004**	**0.0000**	**2.0845**

3.7 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2006	0.0000	0.2006	0.1015	0.0000	0.1015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.2006**	**0.0239**	**0.2245**	**0.1015**	**0.0220**	**0.1234**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4390**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5600e-003	1.4600e-003	0.0119	1.0000e-005	1.3900e-003	2.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3173	1.3173	1.0000e-004	0.0000	1.3199
Total	**1.5600e-003**	**1.4600e-003**	**0.0119**	**1.0000e-005**	**1.3900e-003**	**2.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.3173**	**1.3173**	**1.0000e-004**	**0.0000**	**1.3199**

3.7 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0457	0.0000	0.0457	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	**0.0434**	**0.4557**	**0.2206**	**3.8000e-004**	**0.0903**	**0.0239**	**0.1142**	**0.0457**	**0.0220**	**0.0676**	**0.0000**	**34.1687**	**34.1687**	**0.0108**	**0.0000**	**34.4389**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5600e-003	1.4600e-003	0.0119	1.0000e-005	1.3900e-003	2.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3173	1.3173	1.0000e-004	0.0000	1.3199
Total	**1.5600e-003**	**1.4600e-003**	**0.0119**	**1.0000e-005**	**1.3900e-003**	**2.0000e-005**	**1.4000e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.3173**	**1.3173**	**1.0000e-004**	**0.0000**	**1.3199**

3.8 Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1600e-003	0.0405	0.0553	8.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	7.2674	7.2674	2.3500e-003	0.0000	7.3262
Total	**4.1600e-003**	**0.0405**	**0.0553**	**8.0000e-005**		**2.1600e-003**	**2.1600e-003**		**1.9900e-003**	**1.9900e-003**	**0.0000**	**7.2674**	**7.2674**	**2.3500e-003**	**0.0000**	**7.3262**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	3.4000e-004	2.7300e-003	0.0000	3.9000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3468	0.3468	2.0000e-005	0.0000	0.3474
Total	**3.9000e-004**	**3.4000e-004**	**2.7300e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3468**	**0.3468**	**2.0000e-005**	**0.0000**	**0.3474**

3.8 Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1600e-003	0.0405	0.0553	8.0000e-005		2.1600e-003	2.1600e-003		1.9900e-003	1.9900e-003	0.0000	7.2674	7.2674	2.3500e-003	0.0000	7.3261
Total	**4.1600e-003**	**0.0405**	**0.0553**	**8.0000e-005**		**2.1600e-003**	**2.1600e-003**		**1.9900e-003**	**1.9900e-003**	**0.0000**	**7.2674**	**7.2674**	**2.3500e-003**	**0.0000**	**7.3261**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	3.4000e-004	2.7300e-003	0.0000	3.9000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3468	0.3468	2.0000e-005	0.0000	0.3474
Total	**3.9000e-004**	**3.4000e-004**	**2.7300e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3468**	**0.3468**	**2.0000e-005**	**0.0000**	**0.3474**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5192	2.8188	5.8566	0.0125	0.8852	0.0178	0.9030	0.2386	0.0168	0.2555	0.0000	1,147.4679	1,147.4679	0.0684	0.0000	1,149.1789
Unmitigated	0.5444	3.0596	6.4058	0.0141	1.0036	0.0199	1.0235	0.2705	0.0188	0.2894	0.0000	1,286.7282	1,286.7282	0.0743	0.0000	1,288.5858

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	2.95	35.49	26.11	23,284	20,537
Condo/Townhouse	87.00	85.00	72.50	242,269	213,681
Congregate Care (Assisted Living)	274.00	220.00	244.00	749,909	661,420
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	609.28	634.24	551.68	1,730,565	1,526,358
User Defined Recreational	0.00	0.00	0.00		
Total	973.23	974.73	894.29	2,746,027	2,421,996

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3
Congregate Care (Assisted	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	7.30	7.50	42.30	19.60	38.10	86	11	3
User Defined Recreational	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933
Congregate Care (Assisted Living)	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933
Condo/Townhouse	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933
City Park	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933
User Defined Recreational	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933
Other Asphalt Surfaces	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933
Other Non-Asphalt Surfaces	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	352.9945	352.9945	0.0160	3.3000e-003	354.3777
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	364.1422	364.1422	0.0165	3.4100e-003	365.5691
NaturalGas Mitigated	7.2400e-003	0.0618	0.0263	3.9000e-004		5.0000e-003	5.0000e-003		5.0000e-003	5.0000e-003	0.0000	71.6065	71.6065	1.3700e-003	1.3100e-003	72.0321
NaturalGas Unmitigated	8.6400e-003	0.0738	0.0314	4.7000e-004		5.9700e-003	5.9700e-003		5.9700e-003	5.9700e-003	0.0000	85.4764	85.4764	1.6400e-003	1.5700e-003	85.9843

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	157028	8.5000e-004	7.2400e-003	3.0800e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	8.3796	8.3796	1.6000e-004	1.5000e-004	8.4294
Congregate Care (Assisted Living)	490352	2.6400e-003	0.0226	9.6100e-003	1.4000e-004		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	26.1671	26.1671	5.0000e-004	4.8000e-004	26.3226
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	954387	5.1500e-003	0.0440	0.0187	2.8000e-004		3.5600e-003	3.5600e-003		3.5600e-003	3.5600e-003	0.0000	50.9297	50.9297	9.8000e-004	9.3000e-004	51.2324
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**8.6400e-003**	**0.0738**	**0.0314**	**4.7000e-004**		**5.9800e-003**	**5.9800e-003**		**5.9800e-003**	**5.9800e-003**	**0.0000**	**85.4764**	**85.4764**	**1.6400e-003**	**1.5600e-003**	**85.9843**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	133617	7.2000e-004	6.1600e-003	2.6200e-003	4.0000e-005		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	7.1303	7.1303	1.4000e-004	1.3000e-004	7.1727
Congregate Care (Assisted Living)	424262	2.2900e-003	0.0196	8.3200e-003	1.2000e-004		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	22.6402	22.6402	4.3000e-004	4.2000e-004	22.7748
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	783977	4.2300e-003	0.0361	0.0154	2.3000e-004		2.9200e-003	2.9200e-003		2.9200e-003	2.9200e-003	0.0000	41.8360	41.8360	8.0000e-004	7.7000e-004	42.0846
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**7.2400e-003**	**0.0618**	**0.0263**	**3.9000e-004**		**5.0000e-003**	**5.0000e-003**		**5.0000e-003**	**5.0000e-003**	**0.0000**	**71.6065**	**71.6065**	**1.3700e-003**	**1.3200e-003**	**72.0321**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	155285	45.1740	2.0400e-003	4.2000e-004	45.3511
Congregate Care (Assisted Living)	499801	145.3978	6.5700e-003	1.3600e-003	145.9676
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	596643	173.5704	7.8500e-003	1.6200e-003	174.2505
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**364.1422**	**0.0165**	**3.4000e-003**	**365.5691**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	149781	43.5730	1.9700e-003	4.1000e-004	43.7438
Congregate Care (Assisted Living)	480211	139.6988	6.3200e-003	1.3100e-003	140.2462
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	583417	169.7227	7.6700e-003	1.5900e-003	170.3877
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**352.9945**	**0.0160**	**3.3100e-003**	**354.3777**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6983	0.0162	1.4064	7.0000e-005		7.7500e-003	7.7500e-003		7.7500e-003	7.7500e-003	0.0000	2.2924	2.2924	2.2200e-003	0.0000	2.3479
Unmitigated	12.7508	0.2478	16.0451	0.0266		2.0602	2.0602		2.0602	2.0602	195.2290	84.1686	279.3976	0.1824	0.0154	288.5334

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2418					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6073					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	11.8590	0.2316	14.6387	0.0265		2.0525	2.0525		2.0525	2.0525	195.2290	81.8762	277.1052	0.1802	0.0154	286.1855
Landscaping	0.0426	0.0162	1.4064	7.0000e-005		7.7500e-003	7.7500e-003		7.7500e-003	7.7500e-003	0.0000	2.2924	2.2924	2.2200e-003	0.0000	2.3479
Total	**12.7508**	**0.2478**	**16.0451**	**0.0266**		**2.0602**	**2.0602**		**2.0602**	**2.0602**	**195.2290**	**84.1686**	**279.3976**	**0.1824**	**0.0154**	**288.5334**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0484					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6073					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0426	0.0162	1.4064	7.0000e-005		7.7500e-003	7.7500e-003		7.7500e-003	7.7500e-003	0.0000	2.2924	2.2924	2.2200e-003	0.0000	2.3479
Total	**0.6983**	**0.0162**	**1.4064**	**7.0000e-005**		**7.7500e-003**	**7.7500e-003**		**7.7500e-003**	**7.7500e-003**	**0.0000**	**2.2924**	**2.2924**	**2.2200e-003**	**0.0000**	**2.3479**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.8319	0.3221	7.8100e-003	38.2125
Unmitigated	33.0876	0.4026	9.7500e-003	46.0567

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.85871	1.8925	9.0000e-005	2.0000e-005	1.8999
Condo/Townhouse	1.62885 / 1.02688	4.1263	0.0532	1.2900e-003	5.8408
Congregate Care (Assisted Living)	6.5154 / 4.10754	16.5053	0.2130	5.1500e-003	23.3634
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	4.16986 / 2.62882	10.5634	0.1363	3.2900e-003	14.9526
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**33.0876**	**0.4026**	**9.7500e-003**	**46.0567**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.74533	1.7771	8.0000e-005	2.0000e-005	1.7840
Condo/Townhouse	1.30308 / 0.964244	3.4464	0.0426	1.0300e-003	4.8186
Congregate Care (Assisted Living)	5.21232 / 3.85698	13.7856	0.1704	4.1200e-003	19.2743
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	3.33589 / 2.46847	8.8228	0.1091	2.6400e-003	12.3356
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**27.8319**	**0.3221**	**7.8100e-003**	**38.2125**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	21.4700	1.2688	0.0000	53.1909
Unmitigated	33.0307	1.9521	0.0000	81.8321

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.13	0.0264	1.5600e-003	0.0000	0.0654
Condo/Townhouse	11.5	2.3344	0.1380	0.0000	5.7834
Congregate Care (Assisted Living)	91.25	18.5229	1.0947	0.0000	45.8898
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	59.84	12.1470	0.7179	0.0000	30.0936
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**33.0307**	**1.9521**	**0.0000**	**81.8321**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.0845	0.0172	1.0100e-003	0.0000	0.0425
Condo/Townhouse	7.475	1.5174	0.0897	0.0000	3.7592
Congregate Care (Assisted Living)	59.3125	12.0399	0.7115	0.0000	29.8284
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	38.896	7.8955	0.4666	0.0000	19.5609
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**21.4700**	**1.2688**	**0.0000**	**53.1909**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	212.4000	0.0000	0.0000	212.4000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	300	212.4000	0.0000	0.0000	212.4000
Total		**212.4000**	**0.0000**	**0.0000**	**212.4000**

Creek Side Homes

Humboldt County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trenching	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

APPENDIX E

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	6	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	3	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	10	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Scrapers	Diesel	No Change	0	2	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	3.28000E-003	2.29000E-002	2.72600E-002	4.00000E-005	1.41000E-003	1.41000E-003	0.00000E+000	3.82988E+000	3.82988E+000	2.60000E-004	0.00000E+000	3.83645E+000
Concrete/Industrial Saws	4.62000E-003	3.58900E-002	3.70200E-002	6.00000E-005	2.29000E-003	2.29000E-003	0.00000E+000	5.37657E+000	5.37657E+000	3.80000E-004	0.00000E+000	5.38603E+000
Cranes	7.40700E-002	8.80060E-001	3.44980E-001	9.30000E-004	3.64200E-002	3.35100E-002	0.00000E+000	8.23781E+001	8.23781E+001	2.65400E-002	0.00000E+000	8.30416E+001
Excavators	2.83600E-002	2.89720E-001	3.59040E-001	5.70000E-004	1.39800E-002	1.28600E-002	0.00000E+000	5.09062E+001	5.09062E+001	1.61400E-002	0.00000E+000	5.13097E+001
Forklifts	8.05300E-002	7.25230E-001	6.55600E-001	8.50000E-004	5.41800E-002	4.98400E-002	0.00000E+000	7.48226E+001	7.48226E+001	2.41100E-002	0.00000E+000	7.54253E+001
Generator Sets	7.43900E-002	6.46550E-001	6.85650E-001	1.22000E-003	3.66500E-002	3.66500E-002	0.00000E+000	1.04563E+002	1.04563E+002	5.95000E-003	0.00000E+000	1.04712E+002
Graders	1.70400E-002	2.30290E-001	6.43300E-002	2.30000E-004	7.39000E-003	6.80000E-003	0.00000E+000	2.08806E+001	2.08806E+001	6.61000E-003	0.00000E+000	2.10458E+001
Pavers	9.85000E-003	1.03800E-001	1.16190E-001	1.90000E-004	5.02000E-003	4.62000E-003	0.00000E+000	1.65130E+001	1.65130E+001	5.34000E-003	0.00000E+000	1.66465E+001
Paving Equipment	7.68000E-003	7.76100E-002	1.01660E-001	1.60000E-004	3.83000E-003	3.53000E-003	0.00000E+000	1.43138E+001	1.43138E+001	4.63000E-003	0.00000E+000	1.44295E+001
Rollers	7.58000E-003	7.69700E-002	7.52200E-002	1.00000E-004	4.71000E-003	4.33000E-003	0.00000E+000	9.22022E+000	9.22022E+000	2.98000E-003	0.00000E+000	9.29477E+000
Rubber Tired Dozers	9.64400E-002	1.02633E+000	3.64150E-001	7.20000E-004	5.00400E-002	4.60400E-002	0.00000E+000	6.51916E+001	6.51916E+001	2.06300E-002	0.00000E+000	6.57072E+001
Scrapers	7.45700E-002	9.03970E-001	5.64300E-001	1.06000E-003	3.54200E-002	3.25900E-002	0.00000E+000	9.52426E+001	9.52426E+001	3.01300E-002	0.00000E+000	9.59960E+001
Tractors/Loaders/Backhoes	1.29950E-001	1.30638E+000	1.38384E+000	1.88000E-003	8.36800E-002	7.69800E-002	0.00000E+000	1.66454E+002	1.66454E+002	5.34500E-002	0.00000E+000	1.67791E+002
Welders	6.38400E-002	2.91070E-001	3.27170E-001	4.70000E-004	1.62200E-002	1.62200E-002	0.00000E+000	3.48208E+001	3.48208E+001	5.19000E-003	0.00000E+000	3.49507E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	3.28000E-003	2.29000E-002	2.72600E-002	4.00000E-005	1.41000E-003	1.41000E-003	0.00000E+000	3.82988E+000	3.82988E+000	2.60000E-004	0.00000E+000	3.83645E+000
Concrete/Industrial Saws	4.62000E-003	3.58900E-002	3.70200E-002	6.00000E-005	2.29000E-003	2.29000E-003	0.00000E+000	5.37657E+000	5.37657E+000	3.80000E-004	0.00000E+000	5.38603E+000
Cranes	7.40700E-002	8.80050E-001	3.44980E-001	9.30000E-004	3.64200E-002	3.35100E-002	0.00000E+000	8.23780E+001	8.23780E+001	2.65400E-002	0.00000E+000	8.30415E+001
Excavators	2.83600E-002	2.89720E-001	3.59040E-001	5.70000E-004	1.39800E-002	1.28600E-002	0.00000E+000	5.09061E+001	5.09061E+001	1.61400E-002	0.00000E+000	5.13096E+001
Forklifts	8.05300E-002	7.25230E-001	6.55600E-001	8.50000E-004	5.41800E-002	4.98400E-002	0.00000E+000	7.48226E+001	7.48226E+001	2.41100E-002	0.00000E+000	7.54252E+001
Generator Sets	7.43900E-002	6.46550E-001	6.85650E-001	1.22000E-003	3.66500E-002	3.66500E-002	0.00000E+000	1.04563E+002	1.04563E+002	5.95000E-003	0.00000E+000	1.04712E+002
Graders	1.70400E-002	2.30290E-001	6.43300E-002	2.30000E-004	7.39000E-003	6.80000E-003	0.00000E+000	2.08806E+001	2.08806E+001	6.61000E-003	0.00000E+000	2.10458E+001
Pavers	9.85000E-003	1.03800E-001	1.16190E-001	1.90000E-004	5.02000E-003	4.62000E-003	0.00000E+000	1.65130E+001	1.65130E+001	5.34000E-003	0.00000E+000	1.66465E+001
Paving Equipment	7.68000E-003	7.76100E-002	1.01660E-001	1.60000E-004	3.83000E-003	3.53000E-003	0.00000E+000	1.43138E+001	1.43138E+001	4.63000E-003	0.00000E+000	1.44295E+001
Rollers	7.58000E-003	7.69700E-002	7.52200E-002	1.00000E-004	4.71000E-003	4.33000E-003	0.00000E+000	9.22021E+000	9.22021E+000	2.98000E-003	0.00000E+000	9.29476E+000
Rubber Tired Dozers	9.64400E-002	1.02632E+000	3.64150E-001	7.20000E-004	5.00400E-002	4.60400E-002	0.00000E+000	6.51915E+001	6.51915E+001	2.06300E-002	0.00000E+000	6.57072E+001
Scrapers	7.45700E-002	9.03970E-001	5.64300E-001	1.06000E-003	3.54200E-002	3.25900E-002	0.00000E+000	9.52425E+001	9.52425E+001	3.01300E-002	0.00000E+000	9.59959E+001
Tractors/Loaders/Backhoes	1.29950E-001	1.30638E+000	1.38384E+000	1.88000E-003	8.36800E-002	7.69800E-002	0.00000E+000	1.66454E+002	1.66454E+002	5.34500E-002	0.00000E+000	1.67791E+002
Welders	6.38400E-002	2.91070E-001	3.27170E-001	4.70000E-004	1.62200E-002	1.62200E-002	0.00000E+000	3.48208E+001	3.48208E+001	5.19000E-003	0.00000E+000	3.49506E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cranes	0.00000E+000	1.13629E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21391E-006	1.21391E-006	0.00000E+000	0.00000E+000	1.20422E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17864E-006	1.17864E-006	0.00000E+000	0.00000E+000	1.16937E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20284E-006	1.20284E-006	0.00000E+000	0.00000E+000	1.19323E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.24327E-006	1.24327E-006	0.00000E+000	0.00000E+000	1.14600E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.43674E-006	1.43674E-006	0.00000E+000	0.00000E+000	1.42546E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21117E-006	1.21117E-006	0.00000E+000	0.00000E+000	1.20145E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.39726E-006	1.39726E-006	0.00000E+000	0.00000E+000	1.38605E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.08457E-006	1.08457E-006	0.00000E+000	0.00000E+000	1.07587E-006
Rubber Tired Dozers	0.00000E+000	9.74345E-006	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.07376E-006	1.07376E-006	0.00000E+000	0.00000E+000	1.21752E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.25994E-006	1.25994E-006	0.00000E+000	0.00000E+000	1.14588E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20153E-006	1.20153E-006	0.00000E+000	0.00000E+000	1.19196E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.43592E-006	1.43592E-006	0.00000E+000	0.00000E+000	1.14447E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00

No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	15.00		
Yes	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.19	0.05	0.19	0.05	0.00	0.00
Demolition	Fugitive Dust	0.01	0.00	0.00	0.00	0.55	0.55
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.25	0.12	0.11	0.05	0.55	0.55
Grading	Roads	0.02	0.01	0.02	0.01	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.20	0.10	0.09	0.05	0.55	0.55
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Trenching	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Trenching	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	80.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.06	3.06	3.04	2.65	3.06
Hearth	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	4.63	7.87	8.57	10.81	10.63	10.67	0.00	10.82	10.82	7.90	0.00	10.82
Natural Gas	16.20	16.23	16.21	17.02	16.39	16.39	0.00	16.23	16.23	16.46	15.38	16.23
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	20.00	15.33	15.88	19.99	19.90	17.03
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Suburban Center

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.20	0.49		
No	Land Use	Improve Walkability Design	0.00			
Yes	Land Use	Improve Destination Accessibility	0.18	1.00		
Yes	Land Use	Increase Transit Accessibility	0.06	1.15		
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.10			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.12			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	4.50			
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	10.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.12			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
Yes	No Hearth	
No	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	50.00
Yes	Use Low VOC Paint (Residential Exterior)	50.00
Yes	Use Low VOC Paint (Non-residential Interior)	50.00
Yes	Use Low VOC Paint (Non-residential Exterior)	50.00
Yes	Use Low VOC Paint (Parking)	50.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	20.00	
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
Yes	Install low-flow bathroom faucet	32.00	
Yes	Install low-flow Kitchen faucet	18.00	
Yes	Install low-flow Toilet	20.00	
Yes	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
Yes	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	35.00

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • FAX: 707-441-8877 •shninfo@shn-engr.com

Reference: 016071

April 21, 2017

Mr. Chris Dart, Vice President
Danco Builders
5250 Ericson Way
Arcata, CA 95521

Subject: **Results for the Sound Analysis at Creek Side Homes Project Site, 2000 Foster Avenue Arcata, California**

Dear Mr. Dart:

We have completed a noise study at the Creek Side Homes project site (See Figure 1 – Noise Measurement Locations). The results of the A-weighted sound levels are attached. There are several methods of characterizing sound. The most common in California for measuring compliance with municipal noise standards is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Each location where sound measurements were taken is shown on the attached site map.

Based on the study, it was determined that the predominant noise source at the project site is traffic noise from Foster Avenue and Alliance Road. Section 9.30.050 (*Noise Standards*) of the Arcata Land Use Code (2008) contains Table 3-3 (*Maximum Allowable Transportation Noise Exposure*) which lists the Recommended Maximum Acceptable Noise Exposure by Land Use. The Maximum Exterior Noise Levels for transportation noise allowed for residential uses is 60 dBA Ldn/CNEL. According to the results of the noise measurements, the existing sound levels at the proposed residential development site are in compliance with the City of Arcata noise level standard as indicated in Table 1.

Please contact me at 707-822-5785 with any questions you may have.

Sincerely,

SHN

Garry Rees
Senior Environmental Planner

GCR: ceg

Enclosures: Table 1 - A-Weighted Sound Analysis Results for Creek Side Home Project
Table 2 - Noise Meter Measuring Parameters
Creek Side Homes Project Site Map – Noise Measurement Locations
City of Arcata Land Use Code, Section 9.30.050, Table 3-3 Maximum Allowable Transportation Noise Exposure

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Table 1 A-Weighted Sound Analysis Results for Creek Side Homes Project		
Date	**Measurement**	**Result (dbA)**
Location #1		
April 21, 2017	Average (LEQ)[1]	47.9
	L Max[2]	65.2
	Ldn[3]	47.9
	CNEL[4]	47.9
Location #2		
April 21, 2017	Average (LEQ)	41.8
	L Max	48.4
	Ldn	41.8
	CNEL	41.8
Location #3		
April 21, 2017	Average (LEQ)	42.0
	L Max	53.3
	Ldn	42.0
	CNEL	42.0

1. LEQ: Equivalent Continuous Noise Level
2. L Max: Maximum Noise Level
3. Ldn: Day/Night Sound Level
4. CNEL: Community Noise Exposure Level

Table 2 Noise Meter Measuring Parameters	
Range	50-110 dB
Threshold	Off
Filter	None
Logging interval	15 seconds
Exchange rate	3 dB
Time constant	Slow
Peak weighting	A
Weighting	A

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Creek Side Homes Project Site Map
Noise Measurement Locations
Location 3
Location 2
Location 1
Alliance Rd
North St
Western Ave
Heather Ln
Google earth
© 2016 Google
600 ft
N

a. Street intersections. The vision clearance area shall be defined by measuring 20 feet from the intersection of the front and street side property lines or public street right-of-way (or the extension of the property lines where the corner is improved with curb, gutter, and sidewalk) and connecting the lines across the property.

b. Driveways and interior property lines. The vision clearance area shall be defined by measuring 15 feet along a driveway or interior property line from the intersection of the driveway or interior property line with the street property line, and 15 feet along the street line, away from the driveway or interior property line, and connecting the lines across the intervening property.

c. Parking. No parking spaces shall be located within a vision clearance area.

2. Height limit. No structure, sign, or landscape element shall exceed 36 inches in height within the vision clearance area, unless approved by the Zoning Administrator, in consultation with the Public Works Director and Police Chief, except for tree canopies trimmed to a minimum of 10 feet above grade.

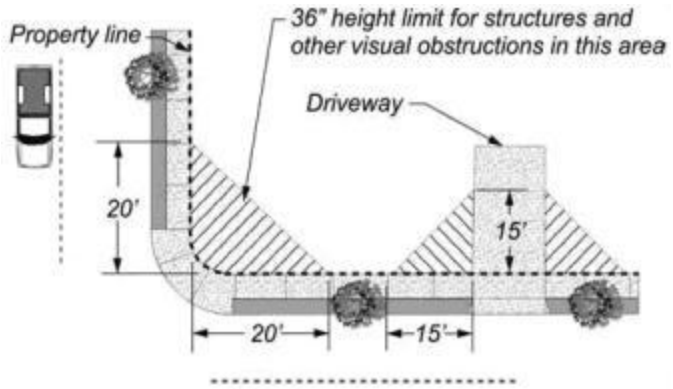

Figure 3-3 - Required Vision Clearance Area

9.30.050 Noise Standards

A. Purpose. This Section implements the policies of the Noise Element of the General Plan, and provides standards for noise mitigation that are intended to protect the community health, safety, and general welfare by limiting exposure to the unhealthful effects of noise.

B. Applicability. No use, activity, or process shall exceed the maximum allowable noise levels established by this Section, except for the following noise sources:

1. Emergencies. Public safety warning devices (e.g., ambulance, fire, and police sirens), sound for alerting persons to the existence of an emergency, or the performance of authorized emergency work;

2. State or Federal preempted activities. Any activity regulated by State or Federal law;

3. Public health and safety activities. Construction, maintenance, and/or repair operations by public agencies and/or utility companies or their contractors that are serving public interests, and/or protecting the public health, safety, and general welfare;

4. Parks. Public agency sanctioned recreational activities and programs conducted in public parks; and

5. Solid waste collection. The authorized collection of solid waste.

C. Definitions. Definitions of the technical terms used in this Section may be found in Article 10 (Glossary) under "Noise."

D. Noise source standards.

1. Stationary and transportation source noise level limitations. No use, activity, or process within the City shall generate noise in excess of the levels identified by Tables 3-2 and 3-3, as the noise is measured at the property line of a noise sensitive land use identified in Tables 3-2 and 3-3.

a. If the measured ambient noise level exceeds the applicable noise level standard in any category shown in the tables, the applicable standards shall be adjusted to equal the ambient noise level.

b. If the noise source being evaluated is continuous and cannot reasonably be discontinued or stopped to allow measurement of the ambient noise level, the noise level measured while the source is in operation shall be compared directly to the applicable noise level standards identified in the tables.

Notwithstanding the above requirements, no person shall allow or cause the generation of any noise of a type, volume, pitch, tone, repetition, or duration that would be found to be a nuisance by a reasonable person beyond the boundaries of the property where the noise is generated.

Table 3-2 - Maximum Allowable Noise Level by Receiving Land Use

Noise Level Descriptor	Maximum Exterior Noise Level			Maximum Interior Noise Level		
	7 am - 7 pm	7 - 10 pm	10 pm - 7 am	7 am - 7 pm	7 - 10 pm	10 pm - 7 am
Dwellings, Transient Lodging, Hospitals, Extended Care, and Similar Uses						
Hourly Leq	55 dB	50 dB	45 dB	45 dB	40 dB	35 dB
Maximum	75 dB	75 dB	70 dB	65 dB	65 dB	60 dB
Meeting Facilities, Auditoriums, Theaters, Libraries, Schools, and Similar Uses						
Hourly Leq	55 dB	55 dB	n/a	40 dB	40 dB	n/a
Maximum	75 dB	75 dB	n/a	60 dB	60 dB	n/a

Notes:

1. The City can impose noise level standards up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

2. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

3. The standards will be applied at the outdoor activity areas of the receiving land use, and at the building facade for upper floor receivers which do not have an outdoor activity area facing the noise source. Where no outdoor activity area is identified, the City has the option to apply only the interior noise level performance standards.

Table 3-3 - Maximum Allowable Transportation Noise Exposure

Noise Sensitive Land Use	Outdoor Activity Areas (1)	Interior Spaces	
	dBA Ldn	dBA Ldn	dBA Leq (2)
Residential	60 (3)	45	N/A
Transient lodging	60 (4)	45	N/A
Hospitals, extended care	60 (3)	45	N/A

Theater, auditorium	N/A	N/A	35
Meeting facility, public or private	60 (3)	N/A	40
Offices	N/A	N/A	45
School, library, museum	N/A	N/A	45
Playground, park	70	N/A	N/A

Notes:

1. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

2. As determined for a typical worst-case hour during periods of use.

3. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

4. In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.

2. Limitation on hours of construction. In order to allow construction schedules to take advantage of the weather and normal daylight hours, and to ensure that nearby residents as well as nonresidential activities are not disturbed by the early morning or late night activities, construction site tool and equipment noise shall be limited in compliance with Table 3-4 or as required by conditions of approval.

Table 3-4 - Allowable Hours of Construction

Day	Allowable Hours
Monday through Friday	8:00 a.m. to 7:00 p.m.
Saturday	9:00 a.m. to 7:00 p.m.
Sunday, Holidays	No heavy equipment-related construction activities allowed

All stationary and construction equipment shall be maintained in good working order, and fitted with factory approved muffler systems.

3. Intrusive noise. When intrusive noise sources have been identified through project review, the review authority shall require that the detrimental effects (sleep interference or the potential for annoyance) be disclosed to neighboring receptor properties.

4. Rhythmic, recurring, or impulsive noise sources. When noise sources have been identified to be rhythmic, reoccurring, or impulsive in nature or comprised mainly of music or speech, they may comply with applicable noise level criteria and still be annoying to individuals. When these types of noise sources have been identified, they may be subject to additional mitigation or mediation, and shall be subject to the criteria in Table 3-3, with a -5 dB penalty applied to the criteria.

E. Standards for sensitive receptors. New noise sensitive land uses as identified in Table 3-3 shall not be allowed where the noise level from existing non-transportation noise generators will exceed the noise level

standards in Table 3-2, or where projected levels of transportation noise will exceed the levels specified in Table 3-3, unless effective noise mitigation measures are incorporated into project design to maintain outdoor and indoor noise levels on the receptor site in compliance with Tables 3-2, and 3-3.

1. New noise-sensitive uses. New construction and retrofits at existing buildings shall include appropriate insulation, glazing, and other sound attenuation measures so that they comply with standards in Table 3-3.

2. Mitigation required. Noise that may affect a proposed noise sensitive land use shall be mitigated to not exceed the noise level standards in Table 3-2 at the property line of any noise-sensitive land use identified in Table 3-3. Appropriate mitigation measures include:

a. Noise attenuation measures, and stationary noise source controls shall include the use of barriers, setbacks, site design, baffles, enclosures, silencers, and improved facade construction techniques.

b. Where noise mitigation measures are required, mitigation shall occur primarily through site planning and project design, where feasible. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

F. Acoustical analysis. Where the Director determines that a proposed project is a noise sensitive land use (such as hospitals, schools, and health care facilities), or may generate noise in excess of any limit established by Tables 3-2 or 3-3, and/or where the use may generate noise in outdoor areas in excess of 60 dBA, the planning permit application for the use shall include an acoustical analysis, which shall:

1. Be the financial responsibility of the applicant;

2. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics;

3. Include noise level measurements, with sufficient sampling periods and locations, to adequately describe local conditions and the predominant noise sources;

4. Estimate existing and projected cumulative (20-year) noise levels in terms of Ldn or CNEL and/or the standards of Table 3-2, and compare those levels to the requirements of this Section and the policies of the Noise Element;

5. Recommend appropriate mitigation to achieve compliance with this Section and the policies and standards of the Noise Element, giving preference to proper site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings that contain noise-sensitive land uses;

6. Estimate noise exposure after prescribed mitigation measures are implemented; and

7. Describe a post-project assessment program that may be used to evaluate the effectiveness of the proposed mitigation measures.

G. Noise measurement. Exterior noise levels shall be measured at the property line of the noise sensitive land use receiving the noise. Noise measurement shall be made with a sound level meter using the 'A' weighted scale at slow meter response. Fast meter response shall be used only for an impulsive noise.

9.30.060 Site Coverage Exception

Lots which do not meet the standard for area or which are smaller than the specified minimum average lot size in the base zone may be developed with more site coverage than allowed by the base zone. The reduction in open

APPENDIX G

Reference: 930121

PHASE I ENVIRONMENTAL SITE ASSESSMENT
2000 FOSTER AVENUE
ARCATA, CALIFORNIA
AP # 505-161-11

Prepared for
North Coast Export Company

Prepared by:

SHN Consulting Engineers & Geologists
812 West Wabash
Eureka, CA 95501
707/441-8855

This Document is Printed on Recycled Paper

JUNE 1993

QA/QC: ___

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PHASE I ENVIRONMENTAL SITE ASSESSMENT
2000 FOSTER AVENUE
ARCATA, CALIFORNIA
AP # 505-161-11

1.0 INTRODUCTION

1.1 Purpose

North Coast Export Company has retained SHN Consulting Engineers & Geologists (SHN) to conduct a Phase I Environmental Assessment of the property located in Arcata, California at 2000 Foster Avenue, Humboldt County Assessors Parcel # 505-161-11.

The property was inspected by SHN and photos, taken on June 15, 1993.

1.2 Involved Parties

Dennis Scott
North Coast Export Company
1053 Northwestern Avenue
Fortuna, California 95540
(707) 725-6911

James Mostovoy
Consultant for North Coast Export Company
7002 Linda Road
Eureka, California 95501
(707) 445-4153

Misti Hood, Environmental Engineer, Phase I Investigator
Martin E. Lay P.E., Environmental Engineering Department
Director, Phase I Reviewer
SHN Consulting Engineers & Geologists
812 W. Wabash
Eureka, California 95501
(707) 441-8855

1.3 Scope of Work

SHN performed the following tasks:

- Reviewed available federal, state, and local agency files to evaluate the property located at 2000 Foster Avenue, Arcata, California, corresponding to Humboldt County Assessor's Parcel # 505-161-11, with respect to regulatory compliance and release of petrochemicals or hazardous materials

- Reviewed available federal, state, and local agency files to evaluate properties adjacent to the project sites, with respect to regulatory compliance and release of petrochemicals or hazardous materials

- Reviewed available agency files and aerial photographs of the project sites, and interviewed individuals with knowledge of project site histories, to evaluate historical conditions

- Inspected the project site for visual signs of contamination

- Conducted a perimeter survey to examine adjoining properties for visual signs of potential contaminant migration

- Provided a determination of the reasonable probability of whether or not hazardous or regulated substances are present on the project site that require local, state, or federal regulatory action

- Provided recommendations for a Preliminary Phase II Site Characterization

- Evaluated the data from the above tasks and prepared the attached report of findings

2.0 GENERAL SITE CHARACTERISTICS

2.1 Adjacent Properties

As seen in Figure 1, the project site is located northwest of the City of Arcata, California, within Township 6 North, Range 1

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East, Section 29, Humboldt Base and Meridian. The project site is located adjacent to the city limits, in an unincorporated area of Humboldt County. It occupies approximately 17 acres.

Two apartment housing developments are located to the east of the project site (Figure 2). A single family housing development is located to the north of the project site. Undeveloped pasture land is located to the west of the project site. A section of railroad spur line is located immediately south and adjacent to the project site. To the south, the railroad is bound by Foster Avenue (formerly Jackson Ranch Road). Two rural residential homes with associated agricultural land front Foster Avenue to the south of the project site.

Adjacent properties, identified in Figure 2, presently include:

North: Single family housing development

East: Two apartment developments. McDaniel Slough separates the apartment development and the project site on the southeast section of the project site parcel.

South: Simpson Train Company railroad track, which fronts Foster Avenue

West: Undeveloped open space used occasionally for pasture or hay

2.2 Site Description, Current Site Uses

The site occupies approximately 17 acres. The site was formerly a lumber mill, which has been dismantled. Current structures on the site consist of remaining concrete slabs and foundations. All buildings, machinery, and other materials have been removed. The site is entirely vegetated with grasses and occasional bushes. Low growing and thick riparian type vegetation exists adjacent to McDaniel Slough. The northern half of the project site is vegetated solely with grasses and bushes. No structures or significant debris were noted during the site visit. Grading activities may have slightly altered the local topography of the project site since the mill closure. It appears that an earthen berm has been constructed to limit access to the site by motor vehicles. The alleged berm is located adjacent to and north of the railroad (see Figure 3, and "On-site Observation Photographs")

3.0 ENVIRONMENTAL SETTING

3.1 Regional Physiological Conditions

The project site is situated at an elevation of approximately 20 feet above mean sea level, in the relatively flat alluvial plain of the Mad River referred to as the Arcata Bottoms. The Arcata Bottoms area gently slopes down in a westward direction.

Surface waters closest to the project sites are McDaniel Slough located on the eastern boundary of the project site and Liscom Slough located approximately 3/4 of mile west of the project site (Figure 1).

Local surface drainage for the project site is to the southwest and the site is relatively flat with a general slope of less than 1 %. An earthen ditch on the north side of the railroad tracks conveys drainage to the east, where it is received into the waters of McDaniel Slough (Figure 3).

3.2 Soil Conditions

Subsurface investigations with respect to soil conditions have not been conducted for the purposes of this report. Therefore, the presence of uncontrolled fill material on the site cannot be ruled out. Previous limited excavation activities to an approximate depth of 4 feet at the project site indicated the presence of wood debris and sawdust in an area to the north of the former mill. (Mostovoy)

Subsurface investigations conducted within 3/4 mile of the project site (Humboldt County, 1989) indicate that soils in the general vicinity are typified by the upper 10 to 15 feet consisting of organic rich silt that appeared to have been deposited in a floodplain environment. Underlying the silt, was an approximately 5 foot thick layer of clean, medium grained, poorly graded sand. At depths ranging between 15 and 25 feet, well graded gravel was encountered. The gravel remained to the bottom of the borings at 36 feet below the ground surface. All borings encountered groundwater at depths of approximately 8 to 10 feet below the ground surface.

3.3 Geologic Conditions

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Alluvial deposits in this area are generally less than 100 feet. Sedimentary deposits underlying alluvial deposits are moderately consolidated sands and gravels from the early to middle

Pleistocene age Falor formation. These deposits are generally more than 2,000 feet thick. Bedrock underlying the Falor formation consists of Late Cretaceous to Early Tertiary age Franciscan Complex. Rocks of the Franciscan are, with minor exceptions, complexly folded, highly fractured, and variably weathered. (Humboldt County, 1989)

3.4 Groundwater Conditions

No subsurface investigation with respect to groundwater has been conducted at the project site for the purposes of this report. However, subsurface investigations conducted within 3/4 mile of the site (Humboldt County, 1989) indicate that depth to groundwater in the vicinity of the project sites is approximately 8 to 10 feet below the surface. Direction of groundwater flow tends to follow local topography, which in the vicinity of the project site is generally west (toward the Pacific Ocean) or southwest (toward Humboldt Bay). Direction of groundwater flow has not been verified in the field.

4.0 RESULTS OF INVESTIGATION

4.1 Site Inspection Observations

Photographs taken of the project sites are attached (See "On-site Observation Photographs").

A site map of the project site is provided as Figure 3.

SHN personnel inspected the site on June 15, 1993. We observed no indications of hazardous or regulated materials on the site. The surface soils are free of obvious contamination with hazardous or regulated materials. With the exception of one tractor tire and miscellaneous wood scraps, the site was free of significant debris.

Former Mill. Only the foundation of the former mill slab remains. The concrete was clean (free of stains). Grasses cover the surface soils surrounding the slab. We observed some gravel surfaces to the south of the former mill. However, we observed no staining of the gravel surfaces.

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Fuel Tank Area. Only the foundation slab of the fuel tank area remains. The concrete or surrounding soils are clean (free of stains). The surrounding soils are generally covered with grass and some gravel patches.

Former Teepee Burner. A portion of the teepee burner foundation remains. We observed no ash residual or burned wood debris. The soils are free of discoloration and are consistent with other soils on the site.

Estimated Green Chain Area. The estimated green chain area was free of soil staining. This area is covered with grass and patches of gravel.

Debarker. Only the elevated foundation slab of the debarker remains. The concrete slab and the surrounding soils were unstained. The surrounding soils are covered with grasses.

Former Log Storage Area. We noted a depression of moist darkly colored soils northeast of the ramp. The soils were free of petroleum odor and appear to contain a high percentage of organic material. This was not consistent with other low lying, moist depressions at other locations on the project site.

Sewer and Water. The project site is not serviced by city sewer or water. (Mostovoy) A septic system (Figure 3) is located on site. The current functional condition of the septic system is unknown. The well head of the water well has been destroyed and (based on current information) the well cannot be located (Mostovoy). The closest water and sewer mains are located to the east of the project site in the apartment housing developments. (Mostovoy)

Electric. The closest power poles are located on the southern side of Foster Avenue, which would have been the former supply line source. SHN was unable to determine if the former power supply system located on the project site consisted of PCB containing transformers. There is no record of PCB spills in the Arcata area or vicinity. (Long)

Radon. The California Department of Health Services under the direction of the Environmental Protection Agency (EPA) conducted a state-wide radon survey in 1990. The results of the survey show that Humboldt County is not situated within an area of concern with respect to radon. (Quinten) To our knowledge, no analytical results exist and no previous environmental investigations have been conducted with respect to radon for the project sites.

4.2 Adjacent Site and Vicinity Observations

Observation photographs are attached (See "On-site Observation Photographs").

Refer to Figure 2 for site orientation in the vicinity of project site.

North: Single family housing development

Berry brambles line the wooden fence line adjacent to this property. No visual signs of contamination migration onto the project site were observed.

West: Undeveloped open space

A low wire fence separates the two properties. No visual signs of contamination migration onto the project site were observed.

South: Railroad tracks owned by Simpson Train Co.

The train tracks are no longer used and have not been used since the mid to late 1980's when the Simpson Timber company closed their lumber mill operations 3/4 of a mile to the west. (Stephens) The drainage course that is located on the north side of the railroad tracks drains to McDaniel Slough. The runoff that is carried in this drainage course has the potential to contain residential and agricultural contaminant constituents from the surrounding area. Such contaminants may consist of petrochemical products and solvents, pesticides, herbicides, fertilizers, fungicides, metals and organics. Migration of the potential contaminants to the project site would have to occur as infiltration through the soils of the drainage course to the underlying soils of the project site.

East: Multi-dwelling apartment developments, and McDaniel Slough

Two apartment type developments are located east of the project site. McDaniel Slough separates the southeast

apartment development and the project site. A large portion of the apartment development that is adjacent to the slough is a recreational park. Land-use in the upgradient hydrological drainage areas for McDaniel Slough northeast of the project site include heavy industrial sites to

residential and undeveloped areas. The potential contaminants contributed to McDaniel Slough from these upgradient uses are varied and unknown. Products used in this drainage area may include petrochemical products and solvents, wood preservatives, formaldehyde, pesticides, herbicides, fertilizers, fungicides, metals and organics. Potential contaminants historically present in the waters flowing in the slough, may have contaminated the earthen sidewalls of the slough, may be contained in the sediments of the slough, or may have infiltrated from the slough to the underlying soils of the project site.

4.3 Regulatory Agency List Review and File Search

Database review of federal and state regulatory agency file information listings included the following:

- National Priorities List (NPL)
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS)
- Toxic Release Inventory system (TRIS)
- Resource Conservation Recovery Information System--Complaint and Non-Complaint RCRA Notifiers (RCRIS)
- Facility Index Systems Summary (FINDS)
- Emergency Response Notification System (ERNS)
- Civil Enforcement Docket
- State Registered Leaking Underground Storage Tanks (LUST)
- State Registered Underground Storage Tanks (UST)
- State Calsite (formerly ASPIS)
- Solid Waste Information System (SWIS)
- State Hazardous Waste Information System (HWIS)
- State Waste Discharger System (WDS)

This review was completed by Environmental Risk Information and Imaging Services (ERIIS), a professional database review service and is included in this report as Appendix A.

The findings of the ERIIS regulatory review information indicate that there are no sites listed with the above agencies within 1/16 mile of the project site. From 1/16 to 1/2 mile from the project site, there are 3 registered UST sites, 4 registered LUST sites, and 1 WDS sites. From 1/2 mile to 1 mile from the project site there are 5 RCRIS, 10 FINDS, 11 registered UST, 11

registered LUST, 3 Calsites, 1 HWIS, and 2 WDS sites. Cross referenced site listing information are located in Appendix A.

4.3.1 On-Site Review

Agencies' files and lists reviewed by ERIIS contain no documented record of the presence of hazardous or regulated materials, such as PCB's, or petrochemicals, on the project site. The Humboldt County Division of Environmental Health (HCDEH) files contain no record of UST installation or other indications of the potential presence of hazardous or regulated materials on the site or as a result of project site activities.

4.3.2. Off-Site Review

The HCDEH files contain records of an unauthorized release from one site within the immediate vicinity of the project site. The site is located at 1800 Bottoms Road and is noted as a lumber mill on Figure 2. This site is currently referred to as the Scaroni Property and was formerly Cascade Forest Products. The unauthorized release of gasoline was reported for a former underground storage tank located at this site. This site is a low priority site and the reported residual soil contamination is less than 50 parts per million (ppm) gasoline.

The California Regional Water Quality Control Board, North Coast Region (RWQCB) has the regulatory responsibility for ensuring clean-up of groundwater and/or soil impacting groundwater at actively leaking UST sites. Review of their "Leaking Underground Storage Tank Case Listing," file (last updated 2/19/93) identified no additional UST sites that contribute to soil and/or groundwater contamination located within 1/2 mile of the project sites.

Additional information on the above mentioned site is available for review at the RWQCB office in Santa Rosa, California. Copies of specific files are available by written request to the RWQCB office. Four to six weeks are required for a reply to a written request.

4.4 Site History/Land Use Review

Information concerning site historic land use was obtained from discussions with James Mostovoy, former manager of North Coast Exports; William Gross, former project site owner; William

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Norris, former project site owner; and Elizabeth Silber, current owner of the parcel west of and adjacent to the project site. SHN obtained additional historic site information by reviewing aerial photographs of the project site vicinity (See Section "7.3: Aerial Photo References").

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Site Ownership and Usage. The mill was constructed in 1951 and originally operated as an old growth redwood mill. Prior to this, the project site was undeveloped open space and may have been used for pasture. Simpson Timber Company purchased the mill during 1968 and continued to operate it as a redwood mill. During 1970 the mill was purchased from Simpson Timber Company by Halverson Industries and operated as a hardwood mill, mainly tan oak. North Coast Exports acquired the mill during 1985 operated it as a hardwood mill. The mill was dismantled and liquidated during 1986. No wood preservatives were ever reportedly used on site.

Fuel Storage. During the mid 1980's two above ground fuel storage tanks (300 gallon gasoline and 1,000 gallon diesel) were removed from the project site and sold to L & M Renner. (Mostovoy) Prior to usage of the above ground tanks, it was reported that two underground fuel storage tanks were used at the project site. These tanks were removed in the early 1970's.

Vehicle Maintenance. The raw lumber was brought to the mill by independent loggers who serviced their own vehicles. Finished lumber was shipped out using independent haulers. The only reported vehicle maintenance that occurred on site was to service the log loaders. (Mostovoy, Grass, and Norris) The log loaders were originally serviced on the grounds of the project site and later serviced inside the mill building. Historically, waste oil was disposed in dispersed areas of the project site. Later, it was recycled with a state licensed recycler. (Norris) Waste oil recycling operations began in the late 1960's or early 1970's.

Site Drainage. A possible drainage channel may have existed on the western fence line and drained to the drainage channel on the southern boundary of the project site. (Silber) The site generally collected minimum ponding during storm events and the gravel surfaces surrounding the mill provided appropriate site drainage. (Gross and Norris)

Woodwaste Disposal. Woodwaste was initially burned in a teepee burner. There were no woodwaste disposal activities conducted on the project site. (Mostovoy and Gross) Ash disposal from the teepee burner was conducted by the surface spreading method and was not placed in excavated pits. (Norris) Use of the teepee burner ceased during the late 1960's to the early 1970's,

after which woodwaste was converted to wood chips or used off site as hog fuel. (Mostovoy, Gross, and Norris)

Adjacent Properties. Based on the aerial photo review by SHN, the following site history was determined:

- The adjacent property to the west has remained unchanged since 1941.
- The first residences to the south were constructed between 1941 and 1948.
- The housing development to the north was constructed between 1948 and 1958.
- The apartment development to the northeast of the project site was constructed between 1966 and 1974.
- The apartment development to the southeast of the project site was constructed between 1974 and 1981.

4.5 Synopsis of Previous Environmental Investigations

Preliminary excavation of nine shallow test pits was conducted by Louisiana-Pacific during 1992 for observation purposes. No analytical samples were collected. Some wood debris was noted in the soils north of the mill. Soils from test pits adjacent to former fuel tank area were reported to have a diesel odor. (Mostovoy)

5.0 CONCLUSIONS

The following conclusions are based on the information obtained and presented in this Phase I Environmental Assessment.

- The project site was operated as a redwood and hardwoods lumber mill from 1951 to 1986. No wood treatment took place on site.

- Groundwater in the vicinity of the project sites is approximately 8 to 10 feet deep and most likely flows to the west or southwest.

- Possible diesel or gasoline soil contamination may exist in the vicinity of the former fuel tank area.

- Possible contamination may exist in the soils or sediments of McDaniel Slough and the earthen drainage ditch north of the railroad. Such contaminants have been also present in the water that flowed through McDaniel Slough and the ditch. Migration of the

possible contaminants to the underlying soils or groundwater of the project site may have occurred but are likely to be minimal.

- Possible surface contamination may be present on the project site in the surface soils due to historic waste oil disposal practices and vehicle maintenance operations.

- No known underground utilities exist in the immediate vicinity of the project site that could act as routes for on-site migration of contaminants from off-site sources.

- An unauthorized release of gasoline was discovered at a lumber mill in the immediate vicinity. Regulatory investigation is ongoing and the site is considered a low priority contamination site.

5.1 Conditions of No Apparent Concern

Based on the information obtained and presented in this Phase I Environmental Site Assessment, the conditions of no apparent on site concern include:

- Federal and State Regulatory Actions/Citations
- Radon
- PCB's

5.2 Conditions of Potential Concern

The areas of potential on-site concern are:

- Possible diesel or gasoline contamination in the vicinity of the former fuel tank locations

- Possible contaminated soils and sediments in McDaniel Slough (assuming one bank of the slough is within the property line)

- Possible waste oil contaminated surface soils

5.3 Preliminary Phase II Recommendations

A preliminary Phase II site characterization is indicated for this project site due to the historic lumber mill activities and

potential migration of off-site contaminants from and located in McDaniel Slough and the drainage course north of the railroad tracks. SHN recommends the following sampling program:

- Excavate two test pits (maximum depth 10 feet) to expose undisturbed soils adjacent to the former fuel tank slab. Field screen the excavations to determine which excavation is most likely to contain contamination. Collect 2 soil samples from different depths (one shallow, one deep) in the selected excavation. Analyze soil samples for Total Petroleum Hydrocarbons (TPH) as Gasoline (TPHG, EPA 8015) and as Diesel (TPHD, EPA 8015), and Total Lead (EPA 7421).

- Excavate three random, shallow test pits to a depth of 5 feet. Collect 2 soil samples from each test pit at field determined depths. Selectively analyze the soil samples for TPH as Motor Oil (TPHMO, EPA 8015), TPH by infrared spectrophotometry (TPHIR, EPA 418.1) and Metals (Cd, Cr, Pb, Zn, Ni).

- Collect an upstream sediment sample from McDaniel Slough within the property line; excavate a test pit within the property line and adjacent to the drainage course north of the railroad (maximum depth 10 feet). Field screen the drainage course test pit excavation to determine the depth of most likely contaminated soils, and collect a soil sample at that depth. Analyze the samples for TPHIR (EPA 418.1), aromatic and chlorinated hydrocarbons (EPA 8010/8020), semi-volatile organics (EPA 625), and Metals (Cd, Cr, Pb, Zn, Ni, Hg, Cu).

- Document field observations, soil types, and soil sampling methods.

6.0 STATEMENT OF LIMITATIONS

The data presented and the opinions expressed in this report are qualified as follows:

1. The sole purpose of the investigation and of this report is to assess the visual characteristics of the site with respect to the presence or absence in the environment of

hazardous material or oil, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and Title 22 of the California Code of Regulations; and to gather information regarding current and past environmental conditions at the sites.

2. SHN derived the data in this report primarily from visual inspections, examination of records in the public domain, and interviews with individuals with information about the sites. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration at the sites; analysis of the data; and reevaluation of the findings, observations, and conclusions expressed in this report.

3. In preparing this report, SHN has relied on and presumed accurate certain information (or the absence thereof) about the site and adjacent properties provided by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, SHN has not attempted to verify the accuracy or completeness of any such information.

4. The data, findings, observations, and conclusions expressed in this report are limited by SHN's scope of work, as defined by this Client's requests, the Client's time and budgetary constraints, and the availability of access to the site.

5. Because of the limitations stated above, the findings, observations, and conclusions expressed by SHN in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state, or local laws or regulations. No warranty or guarantee, whether expressed or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Such data, findings, observations, and conclusions are based solely on site conditions in existence at the time of the investigation.

6. This report has been prepared on behalf of and for the exclusive use of Northcoast Exports and is subject to and issued in connection with their agreement with SHN and the provisions thereof.

7.0 REFERENCES

7.1 Published References

APPENDIX G

Humboldt County. (1989). "Geologic Hazards," Environmental Impact Report for the Proposed Simpson and Wabash Humboldt County Jail Site. Eureka:Humboldt County.

APPENDIX G

7.2 Record of Personal Communications

Gross, William; former project site lumber mill owner. (June 17, 1993). Personal communication.

Long, Tom; Pacific Gas and Electric. (June 25, 1993). Personal communic

Mostovoy, James; current manager of North Coast Exports. (June 8, 1993). Personal communication.

Norris, William; former project site lumber mill owner. (June 23, 1992). Personal communication.

Quinton, Dave; State of California Department of Health Services. (June 22, 1992). Personal communication.

Silber, Elizabeth; adjacent property owner to the west. (June 23, 1993). Personal communication.

Stephens, Tom; SHN Geologist. (June 25, 1993). Personal communication.

7.3 Aerial Photo References

YEAR	FLIGHT DATE	ID #
1941	11-23-41	CVL-6B-11 & 12
1948	6-23-48	CDF -16-124 & 125
1958		HU 11-32
1966		HC 66 17B-46 & 47
1974		HC 74 17A-45 & 46
1981	6-15-81	CDF ALL EU 10 & 19
1988	3-30-88	WAC-88CA 2-43 & 44

APPENDIX H

SHN
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John R. Seivage, PE
K. Jeff Nelson, PE
Roland S. Johnson, Jr., C.E.G.

Reference: 930121.100

February 3, 1995

Mr. Dale Dell 'Osso
Humboldt County Department of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: INITIAL REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA HUMBOLDT AP#505-161-11 FORMERLY SPECIALTY MILL

Dear Mr. Dell 'Osso:

The attached Initial Report of Findings (IROF) for the subject property is being submitted by SHN Consulting Engineers and Geologists for and with the approval of Eel River Sawmills, Inc. (ERS).

Pursuant to recommendations presented in a 1993 Phase I Environmental Site Assessment prepared by SHN for the property, a preliminary Phase II field investigation, authorized by ERS, was conducted by SHN in 1994. Results of soil and groundwater sampling on the property indicate areas of detectable petroleum hydrocarbon contamination. The IROF presents site history and results of the preliminary Phase II field investigation. Additionally, ERS is requesting regulatory oversight assistance for obtaining site closure relative to soil contamination and groundwater contamination, if any, to expedite potential sale and/or development of the property.

Please review the enclosed information and initiate processing through the appropriate regulatory agencies. You can contact me at (707) 441-8855, or Dennis Scott, Eel River Sawmills Inc., at (707) 725-6911. The address for ERS is 1053 Northwestern Avenue, Fortuna, California, 95540. We would appreciate expeditious review of this case due to pending ERS plans for the property, and City of Arcata involvement with Janes Creek (McDaniel Slough) restoration and enhancement activities.

Thank you for your cooperation with this project.

Sincerely ,

SHN CONSULTING ENGINEERS & GEOLOGISTS

Martin E. Lay, PE
Project Manager
MEL:ls
cc w/enclosure: Dennis Scott, Eel River Sawmills, Inc. (2)
Bonnie Rolandelli, NCRWQCB (1)
Steve Tyler, City of Arcata (1)

E:\930121\LTR-2.MEL

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Reference: 930121.100

INITIAL REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA HUMBOLDT COUNTY AP# 505-161-11 FORMERLY SPECIALTY MILL

Prepared for:

EEL RIVER SAWMILLS, INC.

Prepared by:

CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash
Eureka, CA 95501
707/441-8855

JANUARY 1995

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
CIVIL
STATE OF CALIFORNIA

QA/QC: JLA MEL for JLA

J:\930121\REPORT1.MEL

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INITIAL REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA--HUMBOLDT COUNTY AP# 505-161-11 FORMERLY SPECIALTY MILL

EXECUTIVE SUMMARY

Eel River Sawmill (ERS) is submitting the following summary of field investigation on the subject property to initiate the regulatory and planning processes for sale and/or development of the property. The project site is an abandoned, historic, lumber mill. ERS retained SHN to conduct site investigations for potential soil and groundwater contamination that may impact property transfer and potential residential development. SHN has conducted an Phase I Environmental Site Assessment and initial Phase II field investigations to provide ERS with information to proceed with the site planning process.

Historic lumber milling operations at the site have, at specific locations, impacted the site soils and potentially the upper groundwater. Analytical results from two separate 1994 field investigations (soil and groundwater samplings), have indicated minor to moderate petrochemical contamination of the soil and groundwater. No wood preservatives of any type were reported or indicated to have been used at the site, and no volatile organic compounds have been detected in soil or groundwater samples.

Specific areas of documented soil contamination include the historic fuel tank area (FTA), the vehicle maintenance area (VM), the debarker area (DB), isolated areas of the old log deck (DA), the mill leachfield area (LF), and isolated general site areas. The FTA, DB, and VM areas indicate soil contamination (petrochemical) sufficient to warrant remedial action. Groundwater characterization initially indicates potential petrochemical contamination associated with those specific areas.

SHN has discussed the findings with ERS and we recommend the following action be initiated to allow ERS to proceed with property transfer/development.

- Confirm lead regulatory agency and appropriate contacts.
- Initiate appropriate regulatory procedure.
- Schedule meeting to discuss findings presented in this report and to determine course of action for obtaining site closure relative to soil and groundwater contamination issues.
- Mutually agree upon a plan of action and a schedule to implement the plan.

INITIAL REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA--HUMBOLDT COUNTY AP# 505-161-11 FORMERLY SPECIALTY MILL

1.0 INTRODUCTION

This Initial Report of Findings is being submitted by SHN Consulting Engineers and geologists (SHN), on behalf of and with the approval of EEL RIVER SAWMILLS, INC. (ERS) to document subsurface soil and groundwater investigations conducted by SHN on the subject site. An unauthorized release has not been filed for this site.

Formerly operated by several owners, as a lumber producing sawmill, the abandoned, non operational site is being considered for liquidation by its current owner, ERS. SHN conducted a Phase I Environmental Site Assessment (ESA), for the property in June 1993. Pursuant to recommendations in the ESA, ERS authorized SHN to proceed with limited, initial Phase II subsurface soils and groundwater field investigation, to determine the relative extent and types of contamination, if any. Site field work was conducted by SHN in February and May of 1994. This report describes and documents the findings of SHN's field work at the site to date. The report follows the suggested format outlined in the Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks (August 10, 1990), and the California Regional Water Quality Control Board, North Coast Region (RWQCB), "Appendix A" (February 24, 1992).

Included in this report of findings is a background history of the site, a description of the subsurface soils and initial groundwater investigation conducted by SHN, the sampling and testing methodologies used, a summary of the analytical results, site maps showing the sampling locations, the subsurface exploration logs, and a discussion of results.

1.1 Objective

ERS is reporting the findings of the field work to initiate the proper disclosure procedural processes through the appropriate Local, County, and State regulatory and planning entities. The ultimate objective of ERS with respect to the property is to be able to sell the property, potentially for future single or multiple family residential development. SHN has advised ERS that submittal of this document and appurtenant historical and investigative information will facilitate the planning and development process to accomplish this objective.

1.2 Site Description

1.2.1 Site Location

As seen in Figure 1, the approximately 17 acre project site is located northwest of the City of Arcata, California, in the northwest 1/4 of Section 29, Township 6 north, Range 1 east, Humboldt Base and Meridian. The site is located at 2000 Foster Avenue, adjacent to the Arcata City limits, in an unincorporated area of Humboldt County. It is legally delineated as Humboldt County Assessor's parcel number 505-161-11 (See Figure 1).

1.2.2 Site Layout

The project site is situated at an elevation of approximately 20 to 25 feet above mean sea level, in the relatively flat alluvial plain of the Mad River referred to as the Arcata Bottoms. The Arcata Bottoms area gently slopes down in a westward direction.

Surface waters closest to the project sites are McDaniel Slough (Janes Creek) located on the eastern boundary of the project site and Liscom Slough located approximately 0.75 of mile west of the project site (Figure 1).

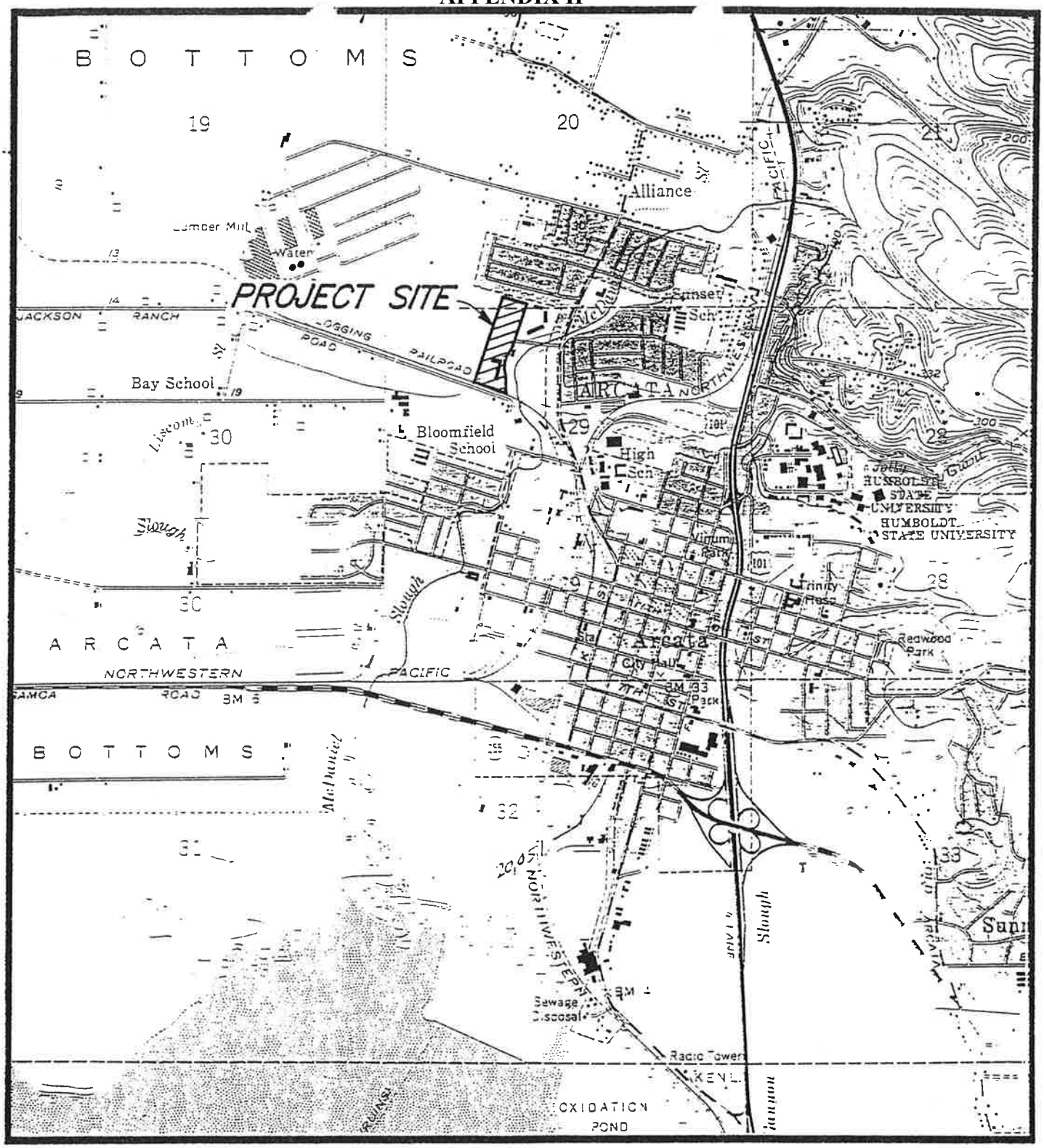
Local surface drainage for the project site is to the southwest, and the site is relatively flat with a general slope of less than 1 percent. An earthen ditch on the north side of the railroad tracks conveys drainage to the east, where it is received into the waters of McDaniel Slough/Janes Creek (Figure 2).

1.2.3. Land Use and Zoning

The site is currently within the jurisdiction of Humboldt County. The Humboldt County General Plan land use designation for the site is Medium Density Residential with zoning classifications of Limited Industrial (1 acre minimum parcel size) and Residential Single-Family (5,000 square foot minimum parcel size.) The site is not within the coastal zone.

The site is just outside the city limit of the City of Arcata. The City's general plan land use designation and prezone for the site is Medium Density Residential. Adjoining properties to the north and east of the site are prezoned Low Density and Medium Density Residential, respectively. To the south and west, the City's prezone is Agricultural Exclusive.

APPENDIX H



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALFORNIA

VICINITY MAP

SHN 930121.100
JANUARY 1995
FIGURE 1

1.2.4 Hydrogeologic Overview

- **Regional Hydrogeology.** Alluvial deposits in the project area are generally less than 100 feet. Sedimentary deposits underlying alluvial deposits are moderately consolidated sands and gravels from the early to middle Pleistocene age Falor formation. These deposits are generally more than 2,000 feet thick. Bedrock underlying the Falor formation consists of Late Cretaceous to Early Tertiary age Franciscan Complex. Rocks of the Franciscan are, with minor exceptions, complexly folded, highly fractured, and variably weathered. (Humboldt County, 1989).

  Subsurface investigations conducted within 0.75 mile of the site (Humboldt County, 1989) indicate that depth to groundwater in the vicinity of the project sites is approximately 8 to 10 feet below the surface. Direction of groundwater flow tends to follow local topography, which in the vicinity of the project site is generally west (toward the Pacific Ocean) or southwest (toward Humboldt Bay). Direction of groundwater flow has not been verified in the field.

  Subsurface investigations conducted within 0.75 mile of the project site (Humboldt County, 1989) indicate that soils in the general vicinity are typified by the upper 10 to 15 feet consisting of organic rich silt that appeared to have been deposited in a floodplain environment. Underlying the silt, was an approximately 5 foot thick layer of clean, medium grained, poorly graded sand. At depths ranging between 15 and 25 feet, well graded gravel was encountered. The gravel remained to the bottom of the borings at 36 feet below the ground surface. All borings encountered groundwater at depths of approximately 8 to 10 feet below the ground surface.

- **Site Hydrogeology.** Subsurface investigations conducted by SHN during February and May 1994 provide the basis for the following discussion of site hydrogeologic conditions.

  The project site is located on a moderately sloping surface of a sequence of Holocene age stream deposits (Janes Creek alluvium). Sedimentary deposits encountered in the test pits and piezometer borings consisted of up to 4.25 feet of fill associated with previous industrial use of the site. The fill is comprised predominantly of sandy to silty gravel and well rounded cobbles to 4 inches in maximum dimension. Common wood debris (sawdust, bark, log trimmings, and milled lumber), occasional concrete rubble, and metal debris were also encountered in the fill. The fill is underlain by alluvial deposits consisting of interbedded medium to very stiff silty to sandy clay, sandy to clayey silt, and dense silty to clayey sand.

Groundwater was encountered in test pits at depths of between 2.8 and 8.5 feet below ground surface. No free groundwater was encountered in test pits TP-4, TP-7, TP-9, TP-10, TP-11, TP-13, TP-13, VM-3, VM-4, FTA-3, DB-WEST, DB-EAST, DA-1, and DA-2 to the maximum trenching depths (between 2 and 6 feet). Groundwater, where encountered in the test pits, was predominantly present in sand or sandy silt strata; perched groundwater was encountered in fill materials in test pits TP-6, TP-12, and TP-15.

Temporary piezometers BH-1, BH-2, BH-3, and BH-4 (at test pits TP-2, TP-5, TP-8, and TP-14, respectively) were surveyed for top of casing elevations referenced to Mean Sea Level (MSL). To determine the stabilized groundwater elevations at these locations, depth to groundwater was measured from the top of casing in each piezometer. Based on groundwater elevations measured in piezometers on May 18, 1994, groundwater beneath the site flows toward the west-southwest (generally toward McDaniel Slough) at a gradient of 0.0103. East - Southeast per 9/7/95 SHN letter

1.3 Site Background

Historical use of the property, until 1950, was open space, undeveloped land, and reportedly pasture at times. A old growth redwood lumber mill was constructed on the site in 1951, and the mill, through various owners and changes in milling operations, continued operation until 1986 (most recently as Specialty Mill). The mill structures were then dismantled and the equipment was liquidated. Remnants of the mill operations existing on site at present include concrete slab foundations for the sawmill, log debarker, and mill loading ramps. Additionally, the northern half of the site is characteristic of long used log deck area with rocked loading corridors and wood debris laden deck areas. No site development has been conducted since the mill dismantling operations.

Information gathered during the ESA indicated that no wood preservatives of any kind were used at the site, and sources of potentially adverse soil and/or groundwater contamination (if any), were a result of the handling of petrochemical products used during mill operations. Petrochemical substances associated with the mill operations include diesel and gasoline fuels, and greases, motor oils, hydraulic fluids, and solvents for equipment operation, maintenance, and repair. Heavy metals associated with used motor oils, gasoline fuels, and solvent used in cleaning mechanical equipment include cadmium (Cd), chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn).

1.3.1 Site Specific Information

Several areas of potential sources of petrochemical contamination were identified in the ESA. These were further evidenced and investigated during the initial and follow up Phase II field work documented in this report. Areas of potential concern include the following (see Figure 2):

- **Mill area (MA).** The lumber milling and green chain pulling area was located at the southern portion of the site, central to the east and west property perimeters. Concrete slab foundations supported the entire mill facility and remain in place at this time.

- **Fuel tank area (FTA).** Located at the southwest portion of the property, the FTA included historic underground fuel tank (UGT), and above ground tank (AGT), fueling facilities. Two UGT's were reportedly in use (contents reportedly gasoline and diesel, of unknown capacity) at the site until the early 1970's, at which time they were removed (undocumented). The UGT's were replaced (date unknown) with two AGT's, and the AGT's were removed in the mid 1980's. A 300 gallon gasoline tank and a 1,000 gallon diesel tank were reportedly removed and sold to L&M Renner. A concrete slab is a remnant in the FTA, but no other specific information regarding the tank systems has been learned.

- **Septic tank area (ST).** A concrete, domestic, wastewater septic tank was found on the site southwest of the mill structure and east of the FTA location. The septic tank was a suspected contaminated area, due to the potential for the system to have collected drainage water or other sources of contamination from historic mill operation practices. A septic tank effluent leachfield area has been estimated, but not fully documented, and was associated with the practices involved with septic tank usage.

- **Vehicle maintenance area (VM).** Vehicle maintenance operations are not well documented as to site specific location, but historical photo review and personnel interviews indicated an area that was located northwest of the mill and west of the "ramp" area. Log loading equipment maintenance was conducted at this mill and would have included engine and running gear servicing, equipment and parts cleaning, and general equipment servicing. Independent truckers were hired to haul logs and lumber, but their vehicles were reportedly not serviced at this site. Waste oil recycling operations reportedly began in the late 1960's or early 1970's.

- **Debarker area (DB).** The log debarking structure was located northeast of the mill, adjacent to McDaniel Slough. A remnant concrete and steel foundation exists, and is readily observable at present. Log debarking facility operations probably included

servicing (oiling and greasing), tear down and rebuilding/replacement (cleaning with solvents, and lubrication), repair of ruptured hydraulic hoses and hydraulic oil operated rams and oil pumps, as well as other similar potential contamination generating operations.

- **Deck area (DA, general site, north).** Raw logs brought to the site for milling were decked to the north of the mill structure in decks running south to north, with access corridors between the log decks. The access corridors appear to have been heavily rocked, for sustaining the continual heavy equipment traffic, and are still well defined on the abandoned deck area. Traffic corridors accumulate dispersed amounts of oils and greases from the equipment traffic, and wood waste debris would be expected to be intermixed with the deck bedding and the traffic corridor materials.

2.0 SITE INVESTIGATIVE WORK

SHN planned and initiated subsurface investigations to be in conformance with current regulatory guidelines, as recommended by the California State Water Resources Control Board, Resolution No. 92-49.

Each of the areas of potential concern were field inspected by SHN staff on February 12, 1994, to establish specific sampling and test pit locations (See Figure 2). This walk through established additional information as to the proximity of each area of concern to the observed historic structures, so that we could determine specific investigative methodologies and characterization of the potential target contaminants. Appendix C contains descriptions of soil and groundwater sampling procedures and methodologies.

2.1 Subsurface Investigation

Two subsurface investigations have been conducted by SHN on the site to date.
The initial cursory subsurface work was conducted on February 17, 1994, followed by a second, more comprehensive soil and groundwater investigation on May 17 and 18, 1994.

2.1.1. February 17, 1994

Initial field subsurface investigation was conducted by SHN on February 17, 1994. A site safety tailgate meeting was conducted onsite by SHN prior to the start of field work. Heavy rainfall on previous days, with rain the day of sampling, had left the site with standing (ponded) water in many locations. SHN then supervised the excavation of 12 backhoe test pits. Backhoe services were provided by Beacom Construction using an extending backhoe

equipped with a 24 inch wide bucket. Test pit locations are shown on Figure 2. Details of soil samples collected during the investigation are summarized in Table 1. Subsurface exploration logs are included in Appendix A. SHN collected soil samples from selected test pits for specific contaminant analysis as follows:

- **Mill Area (MA).** SHN did not sample this area due to the concrete foundation structure, and lack of visual evidence of potential contamination.

- **McDaniel Slough.** SHN did not sample McDaniel Slough sediments due to the high storm runoff flows observed and the scoured nature of the slough channel. These observable characteristics indicate that potential contaminant concentration is not likely in the channel and would not have a potentially adverse impact to overall property development.

- **Former Fuel Tank Area (FTA).** Three test pits were excavated adjacent to the former UGT/AGT area. Soil samples were collected from test pit (FTA-1) at 2 and 5 feet below grade, to determine the vertical extent of soil contamination directly adjacent to the AGT slab. Two other test pits (FTA-2, and FTA-3) were excavated to the south and to the west of FTA-1, to assist in determining the lateral extent of soil contamination at this area. Soil types were also examined for similarities.

- **Septic Tank Area (ST).** One test pit (TP-ST) was excavated adjacent to the septic tank/leachfield area. Soil samples were collected at 2 and 5 feet below grade, to assess the potential impact of petroleum hydrocarbon soil contamination, if any.

- **Vehicle Maintenance (VM).** Four test pits were excavated in the general vicinity of the expected vehicle maintenance area. The exact area of vehicle maintenance was not known; therefore, tests pits (VM-1, VM-2, VM-3, and VM-4) were used to locate possible areas of impact, if any. One test pit (VM-4) was sampled because of the suspected odor associated with the soils encountered at that location. Soil samples were collected at 2 and 4 feet below grade, to assess the potential impact of petroleum hydrocarbon soil contamination, if any.

- **Debarker (DB).** Two test pits were excavated east and west of the former debarker area. A soil sample was collected from the east test pit (DB-East) at approximately 2 feet below grade to assess the potential impact from petroleum hydrocarbons and metals that may have contaminated the soils and potentially impacted McDaniel slough by stormwater runoff. Two soil samples were collected from the west test pit (DB-West) at approximately 2 and 5 feet below grade to assess the potential impact of petroleum hydrocarbons and metals in the soil, if any, adjacent to the Debarker slab.

APPENDIX H

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl-benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-FTA1	2.0	02/17/94	500 (a)	--	19 (e)	--	<0.03	<0.03	<0.03	<0.03	--	--	--	--	--	12
TP-FTA1	5.0	02/17/94	250 (a)	--	220 (e)	--	<0.5 (g)	<0.5 (g)	<0.5 (g)	<0.5 (g)	--	--	--	--	--	8.0
TP-ST	2.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	82	98	61	8.4
TP-ST	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	99 (i)	110	62	9.1
TP-VM4	2.0	02/17/94	--	140 (h)	--	82	--	--	--	--	--	<1.0	25	29	38	20
TP-VM4	4.0	02/17/94	--	<10	--	50	--	--	--	--	--	<1.0	76	88	74	9.7
TP-DBW	2.0	02/17/94	--	130 (h)	--	82	--	--	--	--	--	<1.0	25	28	30	4.8
TP-DBW	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	80	87	58	6.4
TP-DBE	2.0	02/17/94	--	--	--	58	--	--	--	--	--	<1.0	22	45	270	51
TP-DA1	2.0	02/17/94	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
TP-DA2	2.0	02/17/94	--	--	--	95	--	--	--	--	--	--	--	--	--	--
TP-1	1.5	05/17/94	19 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	50 (f)
TP-1 (DUPE)	1.5	05/17/94	--	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	29 (f)
TP-1	4.0	05/17/94	16 (a)	--	3.6 (e)	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	7.6
TP-2	1.0	05/17/94	1.9 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	14
TP-2	4.0	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.0
TP-3	1.0	05/17/94	160 (d)	--	19	--	<0.005	<0.005	<0.10 (g)	<0.10 (g)	--	--	--	--	--	5.3
TP-3	3.2	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	10
TP-3	4.5	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.1
TP-4	2.0	05/17/94	8.5 (d)	200	--	--	--	--	--	--	--	--	--	--	--	--
TP-4	4.5	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	1.3	05/17/94	41 (d)	510	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	4.4	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-6	1.7	05/17/94	24 (d)	150	--	--	--	--	--	--	--	--	--	--	--	--
TP-6 (DUPE)	1.7	05/17/94	5.6	48	--	--	--	--	--	--	--	--	--	--	--	--
TP-6	4.3	05/17/94	49 (d)	820	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	1.2	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	4.9	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	2.7	05/17/94	280 (d)	3400	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	4.5	05/17/94	270 (d)	1700	<1.0	--	<0.050	<0.050	<0.050	<0.025	<0.050	--	--	--	--	--
TP-9	1.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	10
TP-9	4.8	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	6.4
TP-10	1.1	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-10	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	4.3	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	2.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	4.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	1.4	05/18/94	<5.0	210	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	1.7	05/18/94	17 (d)	160	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	4.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX H

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-17	1.1	05/18/94	3.0 (d)	35	--	--	--	--	--	--	--	--	--	--	--	--
TP-17 (DUPE)	1.1	05/18/94	3.2 (d)	28	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	3.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
Groundwater Samples			**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**
BH-1		05/18/94	67 (b)	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.043
BH-2		05/18/94	<50	<500	--	--	--	--	--	--	--	<0.010	0.047	0.077	0.031	<0.020
BH-3		05/18/94	480 (c)	1800	<50	--	<1.0	<1.0	<1.0	<0.50	<1.0	<0.010	0.023	0.034	<0.020	<0.020
BH-4		05/18/94	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--

-- = Not tested

TPHIR = Total Petroleum Hydrocarbons, analyzed using infrared spectrophotometry

** EPA 8010/8020 was the method used for the soil samples, EPA 601/602 was the method used for the water samples.*

DUPE = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesl. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In the labs judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The result reported represents the amount of material in the gasoline range only.

(f) Due to the high level of lead present, this sample and its duplicate sample were analyzed by EPA 6010. The difference in the lead results may be due to sample non-homogeneity.

(g) The detection limits were raised due to matrix interference.

(h) Sample contains large individual peaks in the motor oil range, in addition to the motor oil present. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

(i) The sample from TP-ST at 5.0' was also tested for Soluble Chromium, the result was 0.56 mg/L. The Soluble Threshold Limit Concentration (STLC) for Chromium = 5.0 mg/L.

APPENDIX H

- **Deck Area (DA, general site, north).** Two test pits were excavated in the general log deck area, to assess the potential impact of petroleum hydrocarbons in the soils, if any. A soil sample was collected from each test pit at approximately 2 feet below grade.

Soil samples were collected from the test pits. All test pits then were backfilled with soil excavated from the respective pit, emplaced in the relative order removed. Samples extracted for Total Petroleum Hydrocarbons (TPH) and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) analysis were collected by driving a 2 inch diameter by 6 inch long, decontaminated brass tube into freshly exposed soil. The ends of the tube were sealed using Teflon® tape and plastic end caps. Soil samples extracted for metal analysis were collected using a decontaminated stainless steel trowel, then placed in laboratory supplied, 9 ounce glass jars, and sealed with Teflon® septum bakelite screw caps. Sample containers were appropriately labeled, stored in an iced cooler, and transferred under chain-of-custody documentation to State Certified North Coast Laboratories, Ltd., in Arcata, California.

Soil sampling for laboratory analysis included, at a minimum, gross petrochemical constituents and potentially hazardous metals associated with vehicle/equipment usage and mill operations. Analytical definition and methodology for the tests are indicated below:

• Total Petroleum Hydrocarbons (TPH)	method SM 5520-C, E, F
• TPH as Gasoline (TPHG)	method EPA 5030
• TPH as Diesel (TPHD)	method EPA 3550
• TPH as Motor Oil (TPHMO)	method EPA 3550
• Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	method EPA 8020 MOD soil 602 water
• Metals (5); Cadmium (Ca), Chromium (Cr), Nickel (Ni), Lead (Pb), and Zinc (Zn),	method EPA 6010, all except lead (EPA 7421)
• Volatile Organic Compounds (VOC's)	method EPA 8010/8020 soil 601/602 water

2.1.2 May 17 & 18, 1994

Subsequent to review of the February 1994, sampling analytical results, and discussion with ERS, SHN was authorized by ERS to conduct additional subsurface investigation. This second sampling investigation was planned to more clearly define the horizontal and vertical extent of soil contamination, and to collect initial samples of groundwater to determine the potential presence or absence of groundwater contamination, if any. SHN supervised the backhoe excavation of 18 backhoe test pits. Backhoe excavation services were provided by Hake Construction using an extending backhoe equipped with a 24 inch wide bucket. SHN collected soil samples and logged the soil test pits, and installed temporary, 2 inch diameter,

screened PVC piezometers at four locations for the potential collection of groundwater samples. Specific descriptions of May 17 & 18, 1994, test pits and piezometers are presented below. Test pit and piezometer locations are shown on Figure 2. Details of soil and groundwater samples collected during the investigation are summarized in Table 1. Subsurface exploration logs are included in Appendix A.

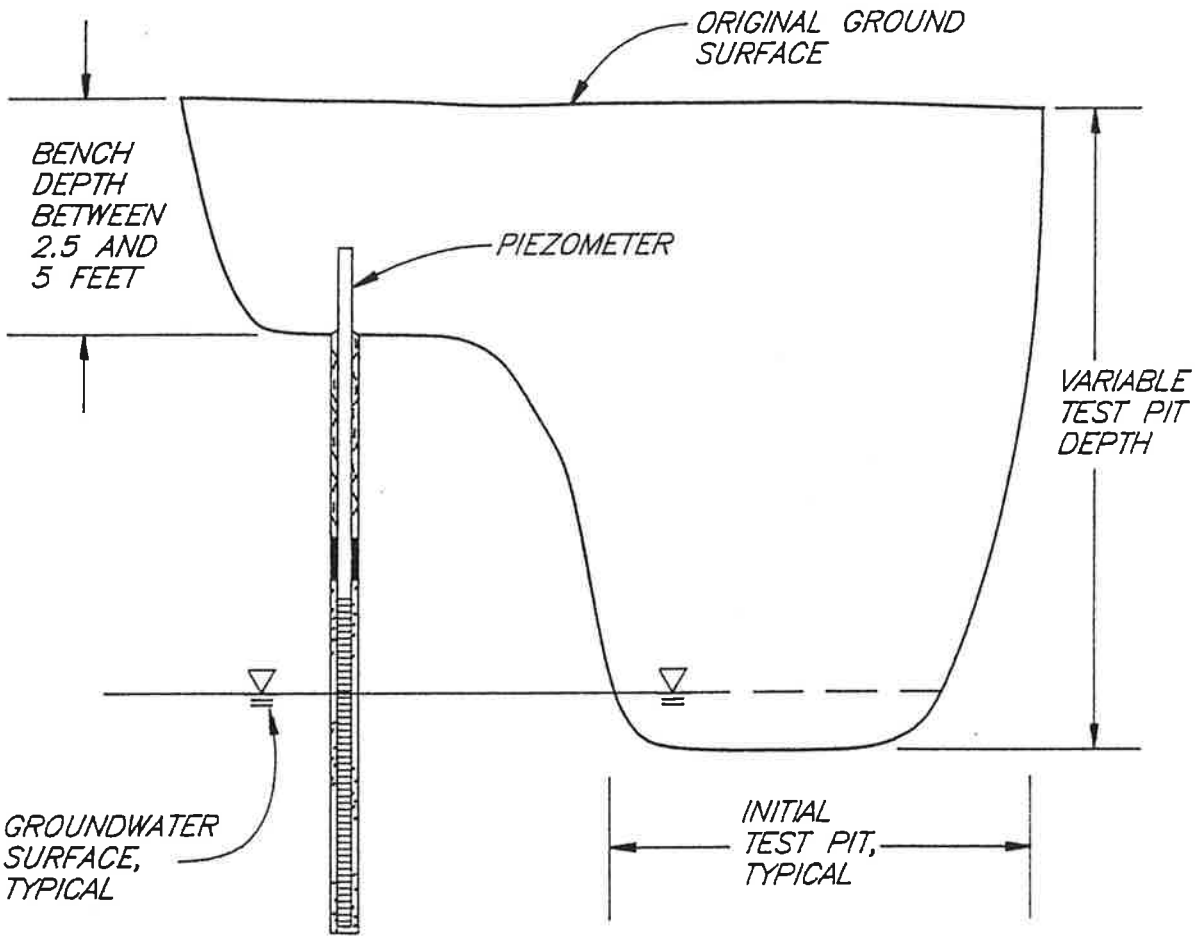
- **FTA.** Three trenches were excavated radially from the previous FTA test pit areas to allow for soil screening and observation of potential contamination, if any, trending away from the existing concrete slab at the FTA. Trenches were initially excavated to a depth of 3 feet below grade, with the selected sampling area advanced to a maximum depth of 5 feet. Perched, initial groundwater seepage was encountered at 2 to 3 feet below grade. TP-1, TP-2, and TP-3 sample locations were selected to potentially establish the limits of horizontal and vertical contamination. Borehole BH-1 was then advanced in TP-2, (the estimated downgradient groundwater direction pit), to a depth of approximately 7 feet (see soil logs in Appendix A). A temporary PVC piezometer, as described in Appendix C was then installed in the borehole (See Figure 3). The following day, the groundwater level was measured and a groundwater sample was collected.

  Soil samples, and the groundwater sample, were analyzed for TPHD, TPHG, BTEX, and lead (Pb).

- **VM.** Previous soil sampling in the VM vicinity allowed for more specific test pit locations during this sampling operation. The area adjacent to the existing concrete ramp a was suspected contaminated area (especially immediately west and north), due in part to SHN assumptions of traffic patterns and proximity to relatively undisturbed land to the west. Test pits TP-5, TP-4, and TP-6, in that order, were excavated, logged, and soil samples were collected for laboratory analysis. Test pit TP-5 was selected as the assumed downgradient location for advancing a borehole for piezometer installation. A preliminary test pit was excavated to 12 feet below grade to observe soil conditions and potential groundwater. Water seepage was noted at 8 feet below grade after between approximately 0.5 and 1 hour after excavation. The test pit was benched at 5 feet below grade to allow for the hand augering of a borehole to 12 feet below grade. A temporary, 2 inch PVC piezometer was then installed in the borehole, with water level measurement and groundwater sampling conducted the following day.

  Soil samples, and the groundwater sample, were analyzed for TPHD and TPHMO. The groundwater sample was also analyzed for the metals (Cd, Cr, Ni, Pb, and Zn).

APPENDIX H



NO SCALE

SPECIALTY MILL (FORMERLY)
ARCATA, CALFORNIA

TEST PIT DETAIL

SHN 930121.100
JANUARY 1995
FIGURE 3

- **DB.** The debarker area is readily defined in the field due to the extensive concrete foundation. Previous soil sampling had indicated probable petroleum contamination on the east side, so additional characterization of the general area was conducted to further identify horizontal and vertical contamination, if any. A trench, approximately 12 feet long and designated as TP-8, was excavated immediately adjacent to the east side of the concrete foundation. Soil excavated from portions of the trench at or near the surface contained metal and wood debris. At approximately 6.5 feet below grade and directly below the face of the foundation, a solvent and motor oil type petrochemical odor was noted. Soil samples were collected at locations of obvious (visual or olfactory) contamination and at changes in soil lithology, until saturated soil conditions were encountered.

  Borehole BH-3 was advanced in TP-8, and a 2 inch PVC piezometer was installed to document depth to groundwater and provide an initial groundwater sample.

  Soil and groundwater samples from TP-8 were analyzed for TPHD, TPHMO, TPHG, BTEX, and lead. The apparent worst case soil sample (TP-8, 4.5) was also analyzed for volatile organic compounds (VOC's). The groundwater sample was also analyzed for metals (Cd, Cr, Ni, and Zn), and VOC's.

  Test pits TP-7, TP-9, and TP-10 were excavated in areas around the debarker foundation such that new sites, farther out than previous sampling, would potentially confirm the presence or absence of soil contamination. No petrochemical odor or visible signs of contamination were evidenced in any of these test pits.

  Soil samples from these test pits were analyzed for TPHD and TPHMO, with the samples from TP-9 additionally analyzed for lead (Pb).

- **DA.** General deck area sampling was conducted in an attempt to determine the relative frequency of the presence or absence of soil contamination, if any, due to log handling and decking activities. Test pits TP-11, TP-12, TP-13, TP-14, and TP-15 were located and excavated to provide additional soil lithology and characterization. All test pits were excavated to approximately five feet deep, except test pit TP-14, which was excavated to 11.5 feet deep. At test pit TP-14 borehole BH-4 was advanced from a bench at 5 feet deep to a final depth of 11.5 feet below grade. A 2-inch diameter PVC piezometer was constructed in the borehole for obtaining groundwater levels and to provide an initial groundwater sample. Fill material and wood debris were encountered to depths of approximately 2 to 3 feet in this area. No visual or olfactory evidence of petrochemical contamination was encountered in these test pits.

  Soil and groundwater samples from these test pits were analyzed for TPHD and TPHMO.

- **General Site.** Remaining portions of the property and mill site were considered for investigation due to proximity to historic structures and facilities, and to cover southeast portions of the property. Test pits TP-16 and TP-17 were located to characterize a potential historic leachfield area and the area adjacent to the old greenchain facility, respectively. Test pit TP-18 was located to provide information in an area that appeared to represent the former facility perimeter. Test pits TP-16 and TP-17 were excavated to depths of 5 feet, and each documented soil with a septic (domestic wastewater) odor, with no wood debris or visual evidence of petrochemical contamination encountered. Test pit TP-18 did not yield any visual or olfactory evidence of soil contamination.

  Soil samples from these test pits were analyzed for TPHD and TPHMO. No groundwater samples were collected.

2.2 Soil Sampling Results

A summary of project-to-date analytical results of sampling conducted by SHN is presented in Table 1. Laboratory reports of analytical results and chain-of-custody documentation is presented in Appendix B. State certified North Coast Laboratories, Ltd., in Arcata, California, conducted the analytical testing for all groundwater and soil samples collected by SHN. The following discussion of sampling results addresses each area of concern previously described. (See Figure 2).

2.2.1 Area Specific Sampling Results

- **FTA.** The former fuel tank area has been documented to have petroleum hydrocarbon soil contamination. Petroleum hydrocarbon concentration levels, above laboratory detection limits, as gasoline and/or diesel, with an area of elevated lead (TP-1), are documented by samples (depth[s], feet), TP-FTA1 (2.0 and 5.0), TP-1 (1.5 and 4.0), TP-2 (1.0), and TP-3 (1.0). No BTEX was indicated in any of these soil samples. 500 ug/g diesel (TP-FTA1, 2.0) and 220 ug/g gasoline (TP-FTA1, 5.0) were the highest concentrations documented.

- **VM.** Petroleum hydrocarbon contamination as diesel and motor oil is documented in the assumed vehicle maintenance area. Contaminant levels exceeding the laboratory analytical limits were found in samples (depth[s], feet) TP-VM4 (2.0), TP-5 (1.3), and TP-6 (1.7 and 4.3). Metals do not exceed background levels for the one sample location (TP-VM4, 2.0 and 4.0) analyzed for metals. Motor oil (510 ug/g) and diesel (41 ug/g) in TP-5, 1.3, were the highest concentrations documented.

- **DB.** Two locations of the debarker area have been documented to have petroleum hydrocarbon contamination. Sample TP-DBW (2.0), at the southwest corner of the foundation, indicates motor oil contamination. The east side of the foundation, midway (TP-8, 2.7 and 4.5), indicates diesel and motor oil contamination, but no volatile organic compound (VOC) contamination. Elevated levels of zinc (at TP-DBE, 2.0, 270 mg/kg) indicate potential metals contamination in this area also. The remaining samples (TP-7, TP-9, and TP-10), collected around the foundation, contained no detectable contaminants of concern.

- **DA.** General sampling in the historic log deck area produced varied analytical results, with only one sample (TP-15, 1.4) indicating petroleum hydrocarbon concentrations (210 ug/g motor oil), above laboratory detection limits. The remaining samples, TP-11, TP-12, TP-13, and TP-14, contained no detectable contaminants of concern.

- **General Site.** Soil sampling results from the remaining portions of the property, specifically the south end, also indicated varying levels of detectable contaminants of concern. Test pit TP-16 (1.7) and TP-17 (1.1) indicated low levels of diesel (17 and 3 ug/g, respectively) and motor oil (160 and 35 ug/g, respectively) range petrochemicals, while the lower (4.6 and 3.6 feet, respectively) samples from the same locations were non detectable. The last sampling location, test pit TP-18, contained no detectable contaminants of concern.

2.3 Groundwater Sampling Results

Groundwater grab samples are representative of a shallow, perched, groundwater, which may be influenced by surface water. Groundwater grab samples were collected from the 2 inch diameter piezometers at locations BH-1 (TP-2), BH-2 (TP-5), BH-3 (TP-8), and BH-4 (TP-14). Table 1 summarizes the analytical results, and Figure 2 shows the sampling locations.

- BH-1 contains diesel (67 ug/L), just above laboratory detection limit, but no detectable BTEX. Lead (Pb), at 0.043 mg/L, is just above the laboratory detection limit of 0.02 mg/L.

- BH-2 contains no detectable contaminants of concern or constituents in a range indicating groundwater contamination.

- BH-3 has significant detectable diesel (480 ug/L) and motor oil (1800 ug/L), constituents, but no detectable volatile organic compounds.

- BH-4 contains no detectable contaminants of concern.

- Dissolved metals detected in groundwater from BH-1, BH-2, and BH-3, are below State and Federal Maximum Contaminant Levels (MCL's).

2.4 Disposition of Excavated Soil and Purge Water

Soil excavated from all test pits, during both SHN field investigations, was replaced in each respective test pit. The soil was excavated and temporarily stockpiled to allow for replacement in a generally reverse order of excavation.

Purge water from the initial purging of the piezometers was discharged into each respective pit adjacent to the piezometer, after groundwater samples were collected. The pits were then backfilled as described above. (See Appendix C).

3.0 CONCLUSIONS

The following initial conclusions relative to project site soils and groundwater character and quality are presented by SHN for consideration and review by all interested parties. Conclusions presented represent SHN's interpretation of data that SHN collected during historic review and field investigative work.

Three areas of concern, relative to potential soil and/or groundwater contamination with petroleum hydrocarbon substances, have been documented. Historic mill operations associated with the fuel tank area (FTA), the vehicle maintenance area (VM), and the log debarking (DB) facility are documented as suspected areas of soil and/or groundwater contamination. Conditions of potential contamination include, but are not necessarily limited to, the following:

- Soil at the FTA is contaminated with gasoline and diesel range petroleum hydrocarbons, to an estimated maximum depth of 7 feet, in an estimated area of 6,400 square feet (80 by 80 feet), representing an estimated 1,100 cubic yards of soil. No volatile organic compound (VOC), constituents were detected, but elevated levels of lead (Pb) were documented.

- Groundwater (perched), sampled from BH-1, has diesel, but no documented gasoline or BTEX contamination. Dissolved lead was found to be below the California MCL for drinking water.

- VM area soil is documented to be contaminated with diesel and motor oil range petroleum hydrocarbons to a maximum estimated depth of 7 feet. Lead concentrations are locally above background levels, but not hazardous. "Hazardous" is defined by the California Code of Regulations Title 22, Chapter 11, (CCR-Title 22). Soil contamination is estimated to cover a cumulative area of 2,400 square feet (30 by 80 feet) with an estimated volume of 500 cubic yards.

- Groundwater (perched), sampled from BH-2, indicates no detectable petroleum hydrocarbon or dissolved metal contamination.

- East side and southwest corner DB soils are locally contaminated with diesel and motor oil range petroleum hydrocarbons to an estimated maximum depth of 7 feet. No VOC or gasoline range petroleum contamination is documented. Metals (lead and zinc) are documented to have elevated (above background) levels, but are not hazardous (CCR-Title 22). The cumulative area of estimated potential contamination is 1,950 square feet (15 by 130 feet), with an estimated volume of 400 cubic yards.

- Groundwater (perched), sampled from BH-3, contains diesel and motor oil range petroleum hydrocarbons. No VOC or dissolved metals contamination is documented.

- The historic log deck area is estimated to have localized, surficial (1 to 2 feet deep, maximum) soil contamination with low level diesel and motor oil range petroleum hydrocarbons.

- An area estimated to be the former mill domestic wastewater leachfield indicates potential surficial, low level, diesel and motor oil range petroleum hydrocarbon contamination. Analytical results may be questionable due to interference by organic material signatures from the domestic waste constituents.

- Surface water sampling of McDaniel Slough was not conducted.

4.0 RECOMMENDATIONS

SHN has discussed the results of this investigation with ERS representatives and we have recommended to ERS the following course of action. The general intent of SHN's recommendations is to facilitate the ERS objective of selling the property, with the appropriate regulatory clearances, to allow a potential buyer to proceed with residential development planning of the property.

Scheduling and implementation of any of the recommendations will be the result of initial discussions between the designated lead regulatory agency and ERS.

- Confirm lead regulatory agency and appropriate contacts.
- Initiate appropriate regulatory procedure.
- Schedule meeting to discuss findings presented in this report and to determine course of action for obtaining site closure relative to soil and groundwater contamination issues.
- Mutually agree upon a plan of action and a schedule to implement the plan.

APPENDIX H

HOLE NUMBER TP-1

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 5/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY JLA
TOTAL DEPTH OF HOLE 4.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1	X				FILL, gravel, clayey, loose, moist, dark brown, well rounded gravel to 4" maximum dimension.	Fill to 3' at west end of test pit, to 1.5' at east end.
	2				CL	CLAY, silty, medium stiff, very moist, dark gray.	
	3					Free water in gravel at 2.8' at west end of test pit.	▽ 5/17/94 at west end
	4	X				Bottom of excavation at 4.0 feet. Free water seeping through gravel at bottom of test pit at east end.	▽ 5/17/94 at east end
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

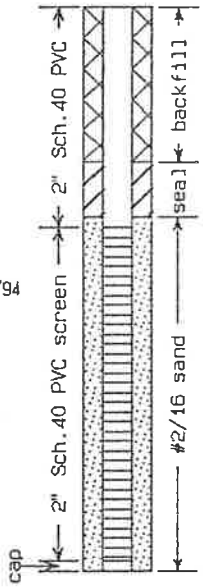
HOLE NUMBER TP-2 (BH-1)

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 5/17/94
GROUND SURFACE ELEVATION 21.5ft.MSL
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe and Hand Auger
LOGGED BY DRW
TOTAL DEPTH OF HOLE 6.7ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 in	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Elevations referenced to mean sea level (MSL) datum.	0					FILL, gravel, sandy, loose, moist, dark gray to brown, gravel to 2" maximum dimenison.
	1	X				FILL, wood debris, wet, reddish-brown.
						FILL, silt, gravelly, clayey, very stiff, light brown to reddish-brown.
					CL	CLAY, silty, stiff, moist, dark brown.
	2					
	3				SM	SAND, silty, clayey, dense, dark gray to dark brown, fine grained sand.
	4				SM	SAND, silty, clayey, dense, wet, mottled reddish-brown.
	5				ML	SILT, sandy, clayey, stiff, wet, grayish-brown mottled reddish-brown.
Bottom of test pit at 5.5 feet.	6					
Bottom of borehole at 6.7 feet.	7					Bottom of excavation at 6.7 feet. Temporary piezometer was removed on 5/18/94. Resultant hole in bench was re-augered to remove filter pack materials, then backfilled with bentonite pellets.
	8					
	9					
	10					
	11					
	12					

Top of Casing Elev: 20.79 ft.

PIEZOMETER DIAGRAM



APPENDIX H

HOLE NUMBER TP-3

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 6.0ft.

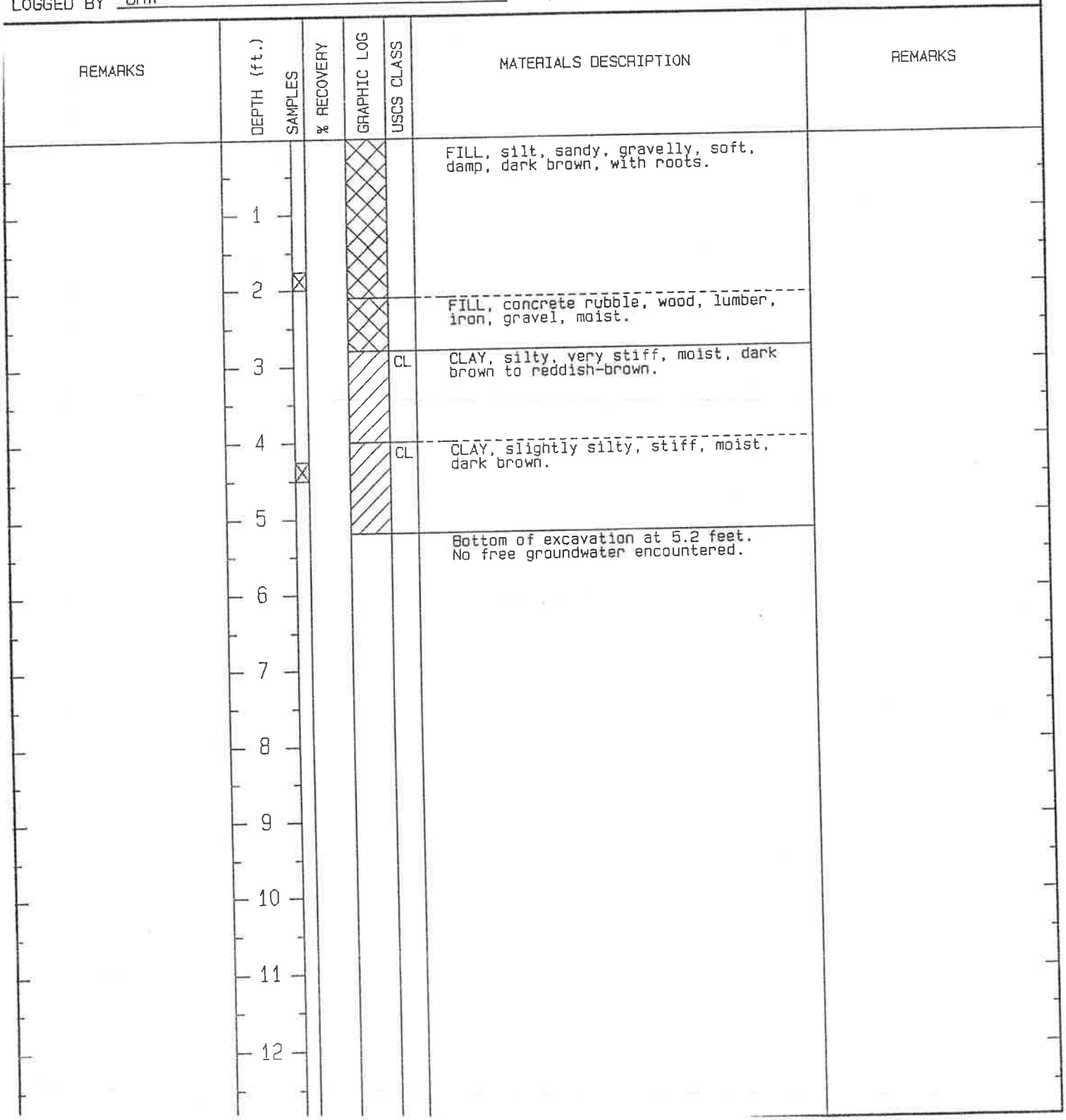
REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, gravel, sandy, loose, moist, gray, gravel to 4" maximum dimension, with wood debris and bark.	Fill to 1' at east end of test pit, to 1.5' at west end.
	2				CL	CLAY, silty, slightly sandy, medium stiff, moist, dark brown.	
	3						
	4				SM	SAND, very silty, clayey, dense, damp, dark brown. Water seeping into test pit.	▽ 5/17/94
	5						
	6					Bottom of excavation at 6.0 feet.	
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-4

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.2ft.



APPENDIX H

HOLE NUMBER TP-15

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 4.9ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					Fill, silt, gravelly, clayey, soft, moist, grayish-brown, common roots.	Asphalt pavement on west end of pit ≈5" thick.
	1					FILL, gravel, silty, loose, moist, grayish-brown.	
	2					FILL, wood debris, gravel, silty.	
	3				CL	CLAY, very silty, very stiff, moist, dark brown mottled red.	▽ 5/18/94 Water seeping from bottom of fill at west end of pit.
					ML	SILT, clayey, stiff, moist, dark brown.	
	4				ML	SILT, very clayey, stiff, moist, dark brown mottled reddish-brown.	Mottling increases with depth.
	5					Bottom of excavation at 4.9 feet.	
	6						
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	12						

APPENDIX H

HOLE NUMBER TP-16

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, gravel, sandy, silty, dense, moist, gravel to 2" maximum dimension.	
	2				ML	SILT, very clayey, very stiff, moist, dark brown.	
	3						
	4				SM	SAND, silty, clayey, dense, damp, grayish-brown.	
	5					Water seeping into pit.	▽ 5/18/94
						Bottom of excavation at 5.0 feet.	Moderate septic odor.
	6						
	7						
	8						
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	10						
	11						
	12						

APPENDIX H

HOLE NUMBER VM-4

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY BRD

JOB NUMBER 930121.100
DATE DRILLED 2/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, silt, soft, very moist, dark brown to black.	
	1					FILL, gravel, sandy, slightly clayey, organic, medium dense, very wet, brown, subangular gravel to 3" maximum dimension, wood fibers.	
	2	X					
	3					FILL, wood debris and fiber, organic, silty, sandy, moist, dark brown.	
	4	X			ML	SILT, very clayey, slightly sandy, stiff, moist, dark brown.	
	5					Bottom of excavation at 5.0 feet. No free groundwater encountered.	
	6						
	7						
	8						
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	11						
	12						

APPENDIX H

HOLE NUMBER TP-ST

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, gravel, silty, loose, moist, dark brown, well rounded gravel to 4" maximum dimension.	
	1					FILL, drain rock, sandy, silty, loose, well rounded gravel to 2" maximum dimension.	Drain rock to bottom of excavation at north end of test pit, to 2.0' at south end.
	2				ML	SILT, sandy, slightly clayey, medium stiff, very moist, dark gray. Free water in drain rock at 2.5' at north end of test pit.	▽ 2/17/94 at north end
	3						
	4						
	5					Bottom of excavation at 5.0 feet.	
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-17

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, gravel, loose, moist, gray, common roots.	
	1					FILL, gravel, silty, dense, moist, grayish-brown, gravel to 1.5" maximum dimension.	
	2				ML	SILT, clayey, very stiff, moist, dark brown.	
	3				ML	SILT, sandy, medium stiff, damp, grayish-brown.	
	4				SM	SAND, silty, dense, wet, gray, fine grained sand. Water seeping into pit at 4.0'.	▽ 5/18/94 Strong septic odor.
	5					Bottom of excavation at 5.0 feet.	
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-18

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 5/18/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY DRW
TOTAL DEPTH OF HOLE 5.2ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, silt, gravelly, soft, moist, dark brown, common roots.	
	1					FILL, gravel, silty, loose, moist, grayish-brown, gravel to 2" maximum dimension.	
					ML	SILT, clayey, sandy, very stiff, moist, dark brown.	
	2						
	3						
					SM	SAND, silty, medium dense, damp, grayish-brown, fine grained sand.	
	4						
							▽ 5/18/94
	5					Bottom of excavation at 5.2 feet.	
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER FTA-3

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY BRD

JOB NUMBER 930121.100
DATE DRILLED 2/17/94
SAMPLER TYPE N/A
TOTAL DEPTH OF HOLE 4.0ft.

REMARKS	DEPTH (ft.) / SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0				FILL, gravel, sandy, slightly clayey, medium dense, very moist, brown.	
	1				FILL, sand, well graded, very clayey, gravelly, slightly silty, rounded and angular gravel to 2" maximum dimension.	
	2			ML	SILT, very clayey, slightly sandy, stiff, moist, dark brown, very fine sand.	
	3			CL	CLAY, slightly sandy, stiff, moist, brown, very fine sand.	
	4				Bottom of excavation at 4.0 feet. No free groundwater encountered.	
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					

APPENDIX H

HOLE NUMBER VM-1

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE N/A
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, gravel, sandy, slightly clayey, medium dense, very moist, brown.	
	1					FILL, wood debris and fiber, slightly silty, slightly sandy, soft, moist, brown.	
	2					FILL, clay, silty, sandy, gravelly, organic, medium stiff, moist, dark brown, gravel to 1/2" maximum dimension, wood fiber.	
	3				CL	CLAY, slightly sandy, stiff, moist, brown, fine grained sand.	
	4						
	5					Bottom of excavation at 5.0 feet.	▼ 2/17/94
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER FTA-1

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 6.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, gravel, sandy, slightly clayey, medium dense, very moist, brown.	
	1					FILL, sand, well graded, very clayey, silty, gravelly, organic, rounded and angular gravel and cobbles to 4" maximum dimension, wood debris to ≈1/4" in size.	
	2	X					
	3				ML	SILT, very clayey, slightly sandy, medium stiff, dark brown, fine grained sand.	
	4						
	5	X			SC	SAND, very fine, clayey, medium stiff, very moist, brown.	Petroleum odor from 5' to 6'.
	6				SC	SAND, coarse to fine, very clayey, medium stiff, very moist, brown.	▼ 2/17/94
						Bottom of excavation at 6.0 feet.	
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER FTA-2

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, gravel, sandy, slightly clayey, medium dense, very moist, brown.	
	1					FILL, sand, well graded, very clayey, silty, gravelly, organic, rounded and angular gravel and cobbles to 4" maximum dimension, wood debris to ≈1/4" in size.	
	2						
	3				ML	SILT, very clayey, slightly sandy, medium stiff, dark brown, fine grained sand.	
	4						
	5					Bottom of excavation at 5.0 feet.	▽ 2/17/94
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER VM-2

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE N/A
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, gravel, sandy, slightly clayey, medium dense, very moist, brown.	
	1					FILL, wood debris and fiber, slightly silty, slightly sandy, soft, moist, brown.	
	2					FILL, clay, silty, sandy, gravelly, organic, medium stiff, moist, dark brown, gravel to 1/2" maximum dimension, wood fiber.	
	3				CL	CLAY, slightly sandy, stiff, moist, brown, fine grained sand.	
	4						
	5					Bottom of excavation at 5.0 feet.	▽ 2/17/94
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER VM-3

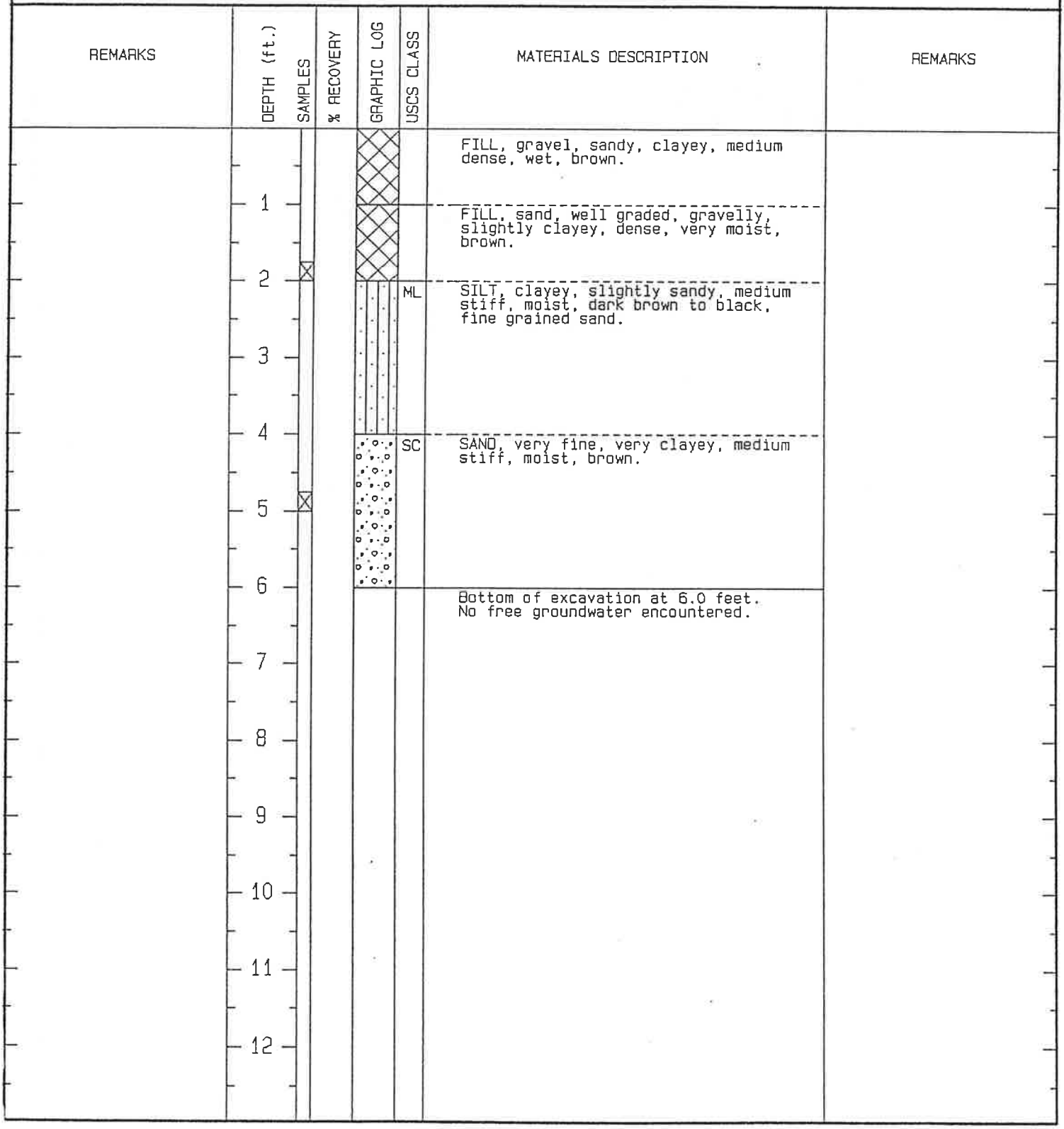
PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE N/A
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 5.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, gravel, sandy, slightly silty, clayey, medium dense, very moist, brown.	
	2				ML	SILT, very clayey, slightly sandy, very stiff, moist, dark brown.	
	3						
	4						
	5						
	6					Bottom of excavation at 5.5 feet. No free groundwater encountered.	
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER DB-WEST

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 6.0ft.



APPENDIX H

HOLE NUMBER DB-EAST

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY BRD

JOB NUMBER 930121.100
DATE DRILLED 2/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 2.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, silt, clayey, sandy, gravelly, soft, very moist, black, organic, gravel to 3" maximum dimension, with wood, metal, and concrete debris.	
	2					Bottom of excavation at 2.0 feet. Concrete slab at 2.0 feet. No free groundwater encountered.	
	3						
	4						
	5						
	6						
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	8						
	9						
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	11						
	12						

APPENDIX H

HOLE NUMBER DA-1

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 2/17/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY BRD
TOTAL DEPTH OF HOLE 2.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, organic, clayey, silty, soft, wet, dark brown, wood debris.	
	2	⊠				Bottom of excavation at 2.0 feet. No free groundwater encountered.	
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER DA-2

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY BRD

JOB NUMBER 930121.100
DATE DRILLED 2/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 2.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, sandy, gravelly, clayey, medium dense, very moist, brown, gravel and cobbles to 4" maximum dimension, coarse grained sand.	
	2					Wood debris.	
						Bottom of excavation at 2.0 feet. No free groundwater encountered.	
	3						
	4						
	5						
	6						
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	11						
	12						

APPENDIX H

HOLE NUMBER TP-13

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, silty, moist, dark brown, minor gravel, common roots.	
	1					FILL, gravel, silty, clayey, medium dense, moist, grayish-brown, gravel to 3" maximum dimension.	
	2					FILL, composted wood, charcoal, sandy, clayey, steel cable.	
					CL	CLAY, silty, stiff, moist, dark brown.	
	3						
	4						
	5						
						Bottom of excavation at 5.5 feet. No free groundwater encountered.	
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-14 (BH-4)

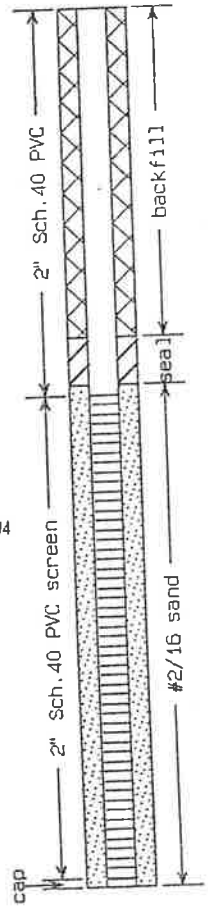
PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION 27.5ft.MSL
EXCAVATION METHOD Backhoe and Hand Auger
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 11.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 in	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Elevations referenced to mean sea level (MSL) datum.	0					FILL, silt, gravelly, moist, dark brown, roots.
	1					FILL, gravel, sandy, silty, dense, damp, gray to medium brown.
	2					
	3					FILL, burnt wood, charcoal, dense, moist to wet, black mottled reddish-brown.
	4				CL	CLAY, silty, stiff, moist, dark brown.
	5				CL	CLAY, very silty, stiff, damp, brown mottled yellowish-brown.
	6					
	7					
	8				SM	SAND, slightly silty, dense, damp, light brown.
	9				ML	SILT, sandy, slightly clayey, stiff, wet brown mottled reddish-brown.
	10					
	11					
Bottom of borehole and test pit at 11.5 feet.	12					Bottom of excavation at 11.5 feet. Temporary piezometer was removed on 5/18/94. Resultant hole in bench was re-augered to remove filter pack materials, then backfilled with bentonite pellets.
	13					
	14					

Top of Casing Elev: 25.22 ft.

PIEZOMETER DIAGRAM



APPENDIX H

HOLE NUMBER TP-11

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

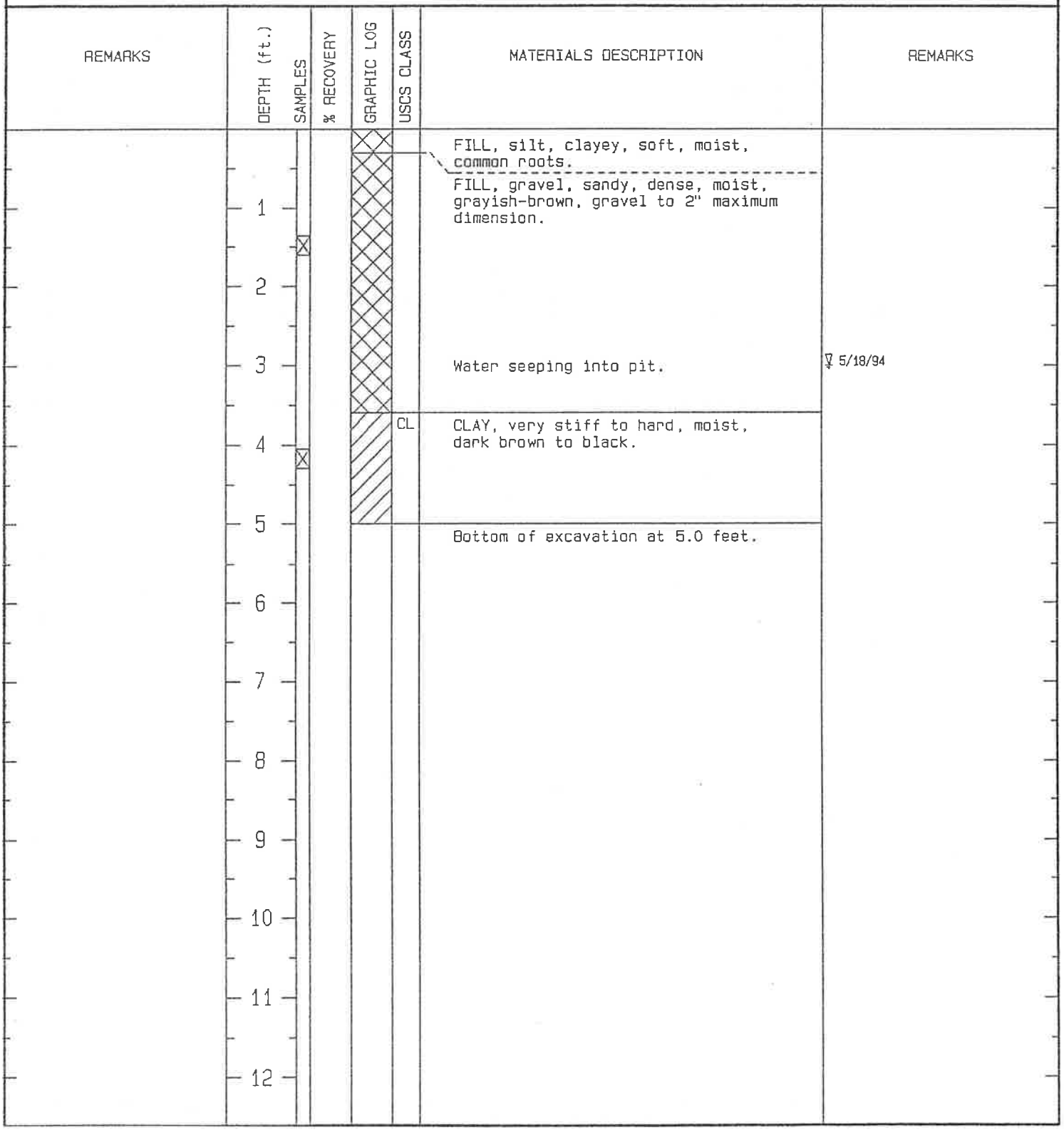
JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 4.6ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, silt, gravelly, soft, moist, dark brown, common roots.	
						FILL, gravel, sandy, silty, wet, grayish-brown.	
	2					FILL, wood debris, wet.	Strong organic odor.
	3				CL	CLAY, silty, very stiff, moist.	
	4						
					ML	SILT, sandy, clayey, stiff, moist.	
	5					Bottom of excavation at 4.6 feet. No free groundwater encountered.	
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-12

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 5/18/94
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand sampled
EXCAVATION METHOD Backhoe
LOGGED BY DRW
TOTAL DEPTH OF HOLE 5.0ft.



APPENDIX H

HOLE NUMBER TP-9

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, silt, soft, moist, dark brown, common roots.	
						FILL, gravel, silty, sandy, moist, grayish-brown.	
	1				ML	SILT, clayey, very stiff, moist, dark brown mottled reddish-brown.	
	2						
	3						
	4				SM	SAND, very silty, clayey, dense, moist, grayish-brown.	
	5					Bottom of excavation at 5.0 feet. No free groundwater encountered.	
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-10

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 4.8ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, silt, soft, moist, common roots.	
						FILL, clay, gravelly, stiff, moist, reddish-brown.	
	1				ML	SILT, clayey, very stiff, moist, dark brown.	
	2				ML	SILT, clayey, stiff, moist, medium brown	
	3						
	4				SM	SAND, very silty, slightly clayey, dense, damp.	
	5					Bottom of excavation at 4.8 feet. No free groundwater encountered.	
	6						
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-7

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/18/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	1					FILL, silt, clayey, soft, moist, common roots.	
						FILL, gravel, silty, loose, moist, dark brown, with reddish-brown wood debris at east end of test pit.	
	2				ML	SILT, sandy, clayey, very stiff, moist, dark brown mottled yellowish-brown.	
	3						
	4				ML	SILT, sandy, stiff, moist, medium to dark brown.	
	5						
	6					Bottom of excavation at 5.5 feet. No free groundwater encountered.	
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX H

HOLE NUMBER TP-8 (BH-3)

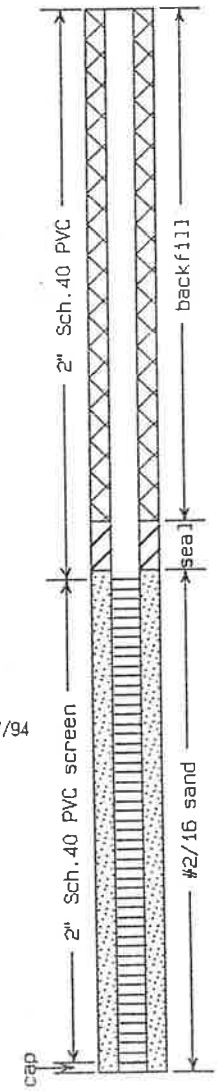
PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION 22.8ft.MSL
EXCAVATION METHOD Backhoe and Hand Auger
LOGGED BY JLA

JOB NUMBER 930121.100
DATE DRILLED 5/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 12.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 in	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Approximately 2.7' thick concrete slab on entire west wall of test pit from ≈ 0.5' below ground surface.	1					FILL, silt, gravelly, soft, moist, dark brown, rounded gravel and cobbles to 5" maximum dimension, with abundant roots, wood debris, and metal debris (sheet metal, pipes).
Smells of old motor oil/ grease.	2					
	3	⊠				FILL, silt, clayey, medium stiff, moist, gray and brown variegated, occasional wood debris.
Elevations referenced to mean sea level (MSL) datum.	4					
	5	⊠			ML SM	SILT, sandy, clayey, to SAND, silty, clayey, stiff/dense, very moist to wet, gray to reddish-brown variegated, fine to medium grained sand.
Soil smells of solvent type petroleum hydrocarbon.	6					
	7					
	8					
	9					
Bottom of test pit at 9.5 feet.	10				ML	SILT, clayey, stiff, wet, gray.
	11					Increasing clay content.
Bottom of borehole at 12.0 feet depth.	12					Bottom of excavation at 12.0 feet. Temporary piezometer was removed on 5/18/94. Resultant hole in bench was re-augered to remove filter pack materials, then backfilled with bentonite pellets.
	13					
	14					

Top of Casing Elev: 21.97 ft.

PIEZOMETER DIAGRAM



APPENDIX H

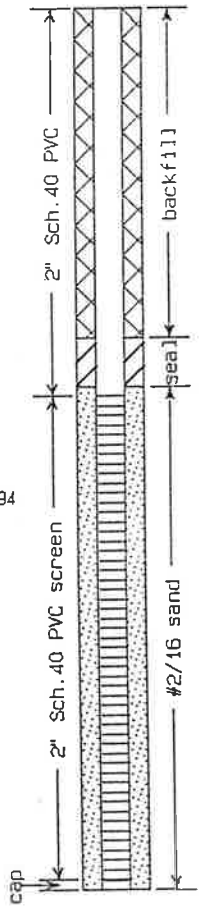
HOLE NUMBER TP-5 (BH-2)

PROJECT North Coast Exports
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 5/17/94
GROUND SURFACE ELEVATION 24.0ft.MSL
SAMPLER TYPE N/A
EXCAVATION METHOD Backhoe and Hand Auger
LOGGED BY JLA
TOTAL DEPTH OF HOLE 12.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 in	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Elevations referenced to mean sea level (MSL) datum.	0–3					FILL, gravel, silty, dense, moist, dark brown, abundant wood debris (sawdust, bark).
	3–7				ML	SILT, sandy, medium stiff, moist, gray, fine to medium grained sand.
	7–12				ML	SILT, clayey, sandy, stiff, moist, gray to yellowish-brown variegated.
Bottom of borehole and test pit at 12.0 feet.	12					Bottom of excavation at 12.0 feet. Temporary piezometer was removed on 5/18/94. Resultant hole in bench was re-augered to remove filter pack materials, then backfilled with bentonite pellets.

Top of Casing Elev: 20.72 ft.

PIEZOMETER DIAGRAM



HOLE NUMBER TP-6

PROJECT North Coast Exports
LOCATION Arcata, CA
GROUND SURFACE ELEVATION
EXCAVATION METHOD Backhoe
LOGGED BY DRW

JOB NUMBER 930121.100
DATE DRILLED 5/17/94
SAMPLER TYPE Hand sampled
TOTAL DEPTH OF HOLE 5.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, silt, gravelly, soft, moist, dark brown, with roots.	
	1					FILL, gravel, cobbles, silty, clayey, very dense, moist, gray to light brown.	
	2						
	3					FILL, wood debris, gravelly, sandy, silty, loose to dense, wet, reddish-brown to dark brown.	▽ 5/17/94 Water seeping into pit from wood material.
	4				ML	SILT, clayey, very stiff, damp.	
	5					Increasing moisture.	
	6					Bottom of excavation at 5.5 feet.	
	7						
	8						
	9						
	10						
	11						
	12						

APPENDIX B

LABORATORY ANALYSIS

APPENDIX H

NORTH COAST LABORATORIES LTD

DATE: December 08, 1994

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

ATTENTION: Dennis Scott

REC'D DEC 12 1994

NCL: 94-05-385

==========

AMENDED ADDENDUM TO CHEMICAL EXAMINATION REPORT

==========

PARAMETER	NOTATIONS
TPHC Diesel	Samples 01B, 03B, 05B 08A, 10A, 12A, 13A 14A and 15A contain material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. Sample 02B contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
TPHC Motor Oil	The matrix spike and matrix spike duplicate had no recovery. The lack of recovery may have been due to spiking on a sample with a high result and/or a sample that was non-homogenous.
TPHC Gas	Sample 02A does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In our judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. Sample 05A does not have the typical pattern of fresh gasoline. All gasoline results reported represent the amount of material in the gasoline range of molecular weights only.
BTXE	Some reporting limits for sample 05A were raised due to matrix interference.
Lead	Due to the high level of lead present, sample 01C and its duplicate sample 23B, were analyzed by EPA 6010. The difference in the lead results between 01C and 23B may have been due to sample non-homogeneity.

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

NORTH COAST LABORATORIES LTD

DATE: June 07, 1994

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, Ca 95540

ATTENTION: Dennis Scott

NCL: 94-05-385

ADDENDUM TO CHEMICAL EXAMINATION REPORT

PARAMETER	NOTATIONS
TPHC Diesel	Samples 01B, 03B, 05B, 08A, 10A, 12A, 13A, 14A and 15A contain material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. Sample 02B contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
TPHC Motor Oil	The matrix spike and matrix spike duplicate had no recovery. The lack of recovery may have been due to spiking on a sample with a high result and/or a sample that was non-homogenous.
TPHC Gas	Sample 02A does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In our judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The result reported represents the amount of material in the gasoline range only.
Lead	Due to the high level of lead present, sample 01C and its duplicate sample 23B, were analyzed by EPA 6010. The difference in the lead results between 01C and 23B may have been due to sample non-homogeneity.

William Diamant (for) C
Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

APPENDIX H

NORTH COAST LABORATORIES LTD.

Date: 06/16/94 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 94-05-385

INVOICE # 60037854

Attn: Dennis Scott

WORK ID: 930121.100/No Co Ex

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	TP-1 (1.5)
01	TP-1 (1.5)
01	TP-1 (1.5)
02	TP-1 (4.0)
02	TP-1 (4.0)
02	TP-1 (4.0)
03	TP-2 (1.0)
03	TP-2 (1.0)
03	TP-2 (1.0)
04	TP-2 (4.0)
04	TP-2 (4.0)
04	TP-2 (4.0)
05	TP-3 (1.0)
05	TP-3 (1.0)
05	TP-3 (1.0)
06	TP-3 (3.2)
06	TP-3 (3.2)
06	TP-3 (3.2)
07	TP-3 (4.5)
07	TP-3 (4.5)
07	TP-3 (4.5)
08	TP-4 (2.0)
09	TP-4 (4.5)
10	TP-5 (1.3)
11	TP-5 (4.4)
12	TP-6 (1.7)

Comments:

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

NORTH COAST LABORATORIES LTD.

Date: 06/16/94
Work Order: 94-05-385
Invoice #: 60037854

REPORT

SAMPLE IDENTIFICATION

Fraction	Sample Description
13	TP-6 (4.3)
14	TP-8 (2.7)
15	TP-8 (4.5)
16	TP-14 (2.0)
17	TP-14 (4.0)
18	TP-8 (4.5)
18	TP-8 (4.5)
19	TP-7 (1.2)
20	TP-7 (4.9)
21	Blank
22	Lab. Control Sample
23	TP-1 (1.5) DUPE
23	TP-1 (1.5) DUPE
24	TP-6 (1.7) DUPE
25	Matrix Spike
26	Matrix Spike Dupe
27	Matrix Spike
28	Matrix Spike Dupe

APPENDIX H

NORTH COAST LABORATORIES LTD.

Date: 06/16/94 REPORT
Work Order: 94-05-385
Invoice #: 60037854

SAMPLE ID: TP-1 (1.5) FRAC.: 01A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/02/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	06/02/94	EPA5030GCFID

SAMPLE ID: TP-1 (1.5) FRAC.: 01B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	19	10	ug/g	10	05/22/94	05/26/94	EPA3550GCFID

SAMPLE ID: TP-1 (1.5) FRAC.: 01C COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	50	20	mg/kg	1.0		05/25/94	EPA7421

SAMPLE ID: TP-1 (4.0) FRAC.: 02A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/03/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
TPHC Gasoline - Soil	3.6	1.0	ug/g	1.0	05/31/94	06/03/94	EPA5030GCFID

SAMPLE ID: TP-1 (4.0) FRAC.: 02B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	16	1.0	ug/g	1.0	05/22/94	05/26/94	EPA3550GCFID

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SAMPLE ID: TP-1 (4.0) FRAC.: 02C COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	7.6	2.0	mg/kg	4.0		05/26/94	EPA7421

SAMPLE ID: TP-2 (1.0) FRAC.: 03A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/02/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	06/02/94	EPA5030GCFID

SAMPLE ID: TP-2 (1.0) FRAC.: 03B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	1.9	1.0	ug/g	1.0	05/22/94	05/26/94	EPA3550GCFID

SAMPLE ID: TP-2 (1.0) FRAC.: 03C COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	14	2.0	mg/kg	4.0		05/26/94	EPA7421

SAMPLE ID: TP-2 (4.0) FRAC.: 04A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/02/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	06/02/94	EPA5030GCFID

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SAMPLE ID: TP-2 (4.0) FRAC.: 04B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	ND	1.0	ug/g	1.0	05/22/94	05/26/94	EPA3550GCFID

SAMPLE ID: TP-2 (4.0) FRAC.: 04C COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	8.0	2.0	mg/kg	4.0		05/26/94	EPA7421

SAMPLE ID: TP-3 (1.0) FRAC.: 05A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Ethylbenzene	ND	0.10	ug/g	1.0	05/31/94	06/02/94	EPA8020
| m,p Xylene	ND	0.10	ug/g	1.0	05/31/94	06/02/94	EPA8020
| o Xylene	ND	0.10	ug/g	1.0	05/31/94	06/02/94	EPA8020
TPHC Gasoline - Soil	19	1.0	ug/g	1.0	05/31/94	06/02/94	EPA5030GCFID

SAMPLE ID: TP-3 (1.0) FRAC.: 05B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	160	50	ug/g	50	05/22/94	05/26/94	EPA3550GCFID

SAMPLE ID: TP-3 (1.0) FRAC.: 05C COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	5.3	2.0	mg/kg	4.0		05/26/94	EPA7421

SAMPLE ID: TP-3 (3.2) FRAC.: 06A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020

NORTH COAST LABORATORIES LTD.

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/03/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	06/02/94	EPA5030GCFID

SAMPLE ID: TP-3 (3.2) FRAC.: 06B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	ND	1.0	ug/g	1.0	05/22/94	05/26/94	EPA3550GCFID

SAMPLE ID: TP-3 (3.2) FRAC.: 06C COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	10	2.0	mg/kg	4.0		05/26/94	EPA7421

SAMPLE ID: TP-3 (4.5) FRAC.: 07A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/02/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/02/94	EPA8020
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	06/02/94	EPA5030GCFID

SAMPLE ID: TP-3 (4.5) FRAC.: 07B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	ND	1.0	ug/g	1.0	05/22/94	05/26/94	EPA3550GCFID

SAMPLE ID: TP-3 (4.5) FRAC.: 07C COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	8.1	2.0	mg/kg	4.0		05/26/94	EPA7421

NORTH COAST LABORATORIES LTD.

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SAMPLE ID: TP-4 (2.0) FRAC.: 08A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	8.5	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	200	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-4 (4.5) FRAC.: 09A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-5 (1.3) FRAC.: 10A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	41	10	ug/g	10	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	510	100	ug/g	10	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-5 (4.4) FRAC.: 11A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-6 (1.7) FRAC.: 12A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	24	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	150	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

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SAMPLE ID: TP-6 (4.3) FRAC.: 13A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	49	20	ug/g	20	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	820	200	ug/g	20	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-8 (2.7) FRAC.: 14A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	280	100	ug/g	100	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	3400	1000	ug/g	100	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-8 (4.5) FRAC.: 15A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	270	20	ug/g	20	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	1700	200	ug/g	20	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-14 (2.0) FRAC.: 16A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-14 (4.0) FRAC.: 17A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

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SAMPLE ID: TP-8 (4.5) FRAC.: 18A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	05/24/94	EPA5030GCFID

SAMPLE ID: TP-8 (4.5) FRAC.: 18B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA 8010 Soil							EPA8010
Dichlorodifluoromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chloromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Vinyl chloride	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Bromomethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Trichlorofluoromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1-Dichloroethylene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Methylene chloride	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
t-1,2-Dichloroethylene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1-Dichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chloroform	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1,1-Trichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Carbon tetrachloride	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Trichloroethylene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichloropropane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Bromodichloromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
2Chloroethylvinyl ether	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
t-1,3-Dichloropropene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
cis-1,3-Dichloropropene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1,2-Trichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Tetrachloroethene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Dibromochloromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Bromoform	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1,2,2Tetrachloroethan	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,3-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,4-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
EPA 8020 Soil							EPA8020
Benzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
Toluene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020

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Chlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
Ethylbenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
m,p Xylene	ND	0.025	ug/g	1.0	05/23/94	06/06/94	EPA8020
o Xylene	ND	0.025	ug/g	1.0	05/23/94	06/06/94	EPA8020
1,3-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
1,4-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
1,2-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020

SAMPLE ID: TP-7 (1.2) FRAC.: 19A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-7 (4.9) FRAC.: 20A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: Blank FRAC.: 21A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/01/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/01/94	EPA8020
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/01/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/01/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/01/94	EPA8020
EPA 8010 Soil							EPA8010
Dichlorodifluoromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chloromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Vinyl chloride	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Bromomethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Trichlorofluoromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1-Dichloroethylene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010

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Methylene chloride	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
t-1,2-Dichloroethylene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1-Dichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chloroform	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1,1-Trichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Carbon tetrachloride	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Trichloroethylene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichloropropane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Bromodichloromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
2Chloroethylvinyl ether	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
t-1,3-Dichloropropene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
cis-1,3-Dichloropropene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1,2-Trichloroethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Tetrachloroethene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Dibromochloromethane	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Chlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
Bromoform	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,1,2,2Tetrachloroethan	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,3-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,4-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8010
EPA 8020 Soil							EPA8020
Benzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
Toluene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
Chlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
Ethylbenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
m,p Xylene	ND	0.025	ug/g	1.0	05/23/94	06/06/94	EPA8020
o Xylene	ND	0.025	ug/g	1.0	05/23/94	06/06/94	EPA8020
1,3-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
1,4-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
1,2-Dichlorobenzene	ND	0.050	ug/g	1.0	05/23/94	06/06/94	EPA8020
Lead	ND	2.0	mg/kg	4.0		05/26/94	EPA7421
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	06/01/94	EPA5030GCFID
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/26/94	06/02/94	EPA3550GCFID

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SAMPLE ID: Lab. Control Sample FRAC.: 22A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	94.2	N/A	% Rec	1.0	05/31/94	06/03/94	EPA8020
| Toluene	97.8	N/A	% Rec	1.0	05/31/94	06/03/94	EPA8020
| Ethylbenzene	95.6	N/A	% Rec	1.0	05/31/94	06/03/94	EPA8020
| m,p Xylene	90.3	N/A	% Rec	1.0	05/31/94	06/03/94	EPA8020
| o Xylene	94.0	N/A	% Rec	1.0	05/31/94	06/03/94	EPA8020
EPA 8010 Soil							EPA8010
Dichlorodifluoromethane	95.5	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Chloromethane	114	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Vinyl chloride	95.6	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Bromomethane	118	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Chloroethane	104	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Trichlorofluoromethane	109	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,1-Dichloroethylene	112	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Methylene chloride	110	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
t-1,2-Dichloroethylene	110	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,1-Dichloroethane	108	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Chloroform	110	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,1,1-Trichloroethane	116	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Carbon tetrachloride	112	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichloroethane	106	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Trichloroethylene	113	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichloropropane	113	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Bromodichloromethane	116	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
2Chloroethylvinyl ether	169	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
t-1,3-Dichloropropene	116	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
cis-1,3-Dichloropropene	115	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,1,2-Trichloroethane	109	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Tetrachloroethene	113	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Dibromochloromethane	116	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Chlorobenzene	111	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
Bromoform	122	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,1,2,2Tetrachloroethan	105	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,3-Dichlorobenzene	111	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,4-Dichlorobenzene	106	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
1,2-Dichlorobenzene	107	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8010
EPA 8020 Soil							EPA8020
Benzene	103	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
Toluene	105	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Chlorobenzene	109	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
Ethylbenzene	93.9	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
m,p Xylene	105	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
o Xylene	104	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
1,3-Dichlorobenzene	103	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
1,4-Dichlorobenzene	102	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
1,2-Dichlorobenzene	98.9	N/A	% Rec	1.0	05/23/94	06/06/94	EPA8020
Lead	110	N/A	% Rec	4.0		05/26/94	EPA7421
TPHC Gasoline - Soil	112	N/A	% Rec	1.0	05/31/94	06/02/94	EPA5030GCFID
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	80.3	N/A	% Rec	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	92.5	N/A	% Rec	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-1 (1.5) DUPE FRAC.: 23A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| Ethylbenzene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
| m,p Xylene	ND	0.010	ug/g	1.0	05/31/94	06/03/94	EPA8020
| o Xylene	ND	0.0050	ug/g	1.0	05/31/94	06/03/94	EPA8020
TPHC Gasoline - Soil	ND	1.0	ug/g	1.0	05/31/94	06/03/94	EPA5030GCFID

SAMPLE ID: TP-1 (1.5) DUPE FRAC.: 23B COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	29	20	mg/kg	1.0		05/25/94	EPA7421

SAMPLE ID: TP-6 (1.7) DUPE FRAC.: 24A COLLECTED: 05/17/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	5.6	1.0	ug/g	1.0	06/03/94	06/07/94	EPA3550GCFID
| TPHC - Motor Oil	48	10	ug/g	1.0	06/03/94	06/07/94	EPA3550GCFID

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SAMPLE ID: Matrix Spike FRAC.: 25A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	43.0	N/A	% Rec	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	0	N/A	% Rec	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: Matrix Spike Dupe FRAC.: 26A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	41.6	N/A	% Rec	1.0	05/26/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	0	N/A	% Rec	1.0	05/26/94	06/02/94	EPA3550GCFID

SAMPLE ID: Matrix Spike FRAC.: 27A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	106	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| Toluene	109	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| Ethylbenzene	115	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| m,p Xylene	109	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| o Xylene	120	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
TPHC Gasoline - Soil	112	N/A	% Rec	1.0	05/31/94	06/02/94	EPA5030GCFID

SAMPLE ID: Matrix Spike Dupe FRAC.: 28A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	110	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| Toluene	112	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| Ethylbenzene	119	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| m,p Xylene	113	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
| o Xylene	128	N/A	% Rec	1.0	05/31/94	06/01/94	EPA8020
TPHC Gasoline - Soil	121	N/A	% Rec	1.0	05/31/94	06/02/94	EPA5030GCFID

APPENDIX H

NORTH COAST LABORATORIES LTD.

REC'D JUN 23 1994

DATE: June 16, 1994

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

ATTENTION: Dennis Scott

NCL: 94-05-386

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ADDENDUM TO CHEMICAL EXAMINATION REPORT

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PARAMETER	**NOTATIONS**
TPHC Diesel	Samples 13A, 15A and 27A contain material in the diesel range of molecular weights & beyond. This suggests the presence of an oil heavier than diesel.
	Sample 19A contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.
	Sample 21A contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesel.
	Due to insufficient sample we were unable to analyze a matrix spike duplicate for the TPH-diesel water & soil.
	All diesel results reported represent the amount of material in the diesel range of molecular weights only.

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

APPENDIX H

NORTH COAST LABORATORIES LTD

Date: 06/17/94 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 94-05-386

INVOICE # 60037919

Attn: Dennis Scott

WORK ID: 930121.100/No Co Ex

Laboratory Supervisor(s)

REPORT CERTIFIED BY

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	TP-9 (1.4)
01	TP-9 (1.4)
02	TP-9 (4.8)
02	TP-9 (4.8)
03	TP-10 (1.1)
04	TP-10 (4.4)
05	TP-11 (1.6)
06	TP-11 (4.4)
07	TP-12 (1.6)
08	TP-12 (4.3)
09	TP-13 (1.5)
10	TP-13 (4.5)
11	TP-15 (1.4)
12	TP-15 (4.5)
13	TP-16 (1.7)
14	TP-16 (4.6)
15	TP-17 (1.1)
16	TP-17 (3.6)
17	TP-18 (1.5)
18	TP-18 (4.5)
19	BH-1
19	BH-1
19	BH-1
20	BH-2
20	BH-2
21	BH-3

Comments:

Previously reported on 06/16/94.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

NORTH COAST LABORATORIES LTD

Date: 06/17/94
Work Order: 94-05-386
Invoice #: 60037919

REPORT

SAMPLE IDENTIFICATION

Fraction	Sample Description
21	BH-3
21	BH-3
21	BH-3
22	BH-4
23	Blank
24	Lab. Control Sample
25	Blank
26	Lab. Control Sample
27	TP-17 (1.1) DUPE
28	Travel Blank
29	Matrix Spike
31	Matrix Spike
33	Matrix Spike
34	Matrix Spike Dupe
35	Matrix Spike
36	Matrix Spike Dupe
37	Travel Blank

NORTH COAST LABORATORIES LTD.

Date: 06/17/94
Work Order: 94-05-386
Invoice #: 60037919

REPORT

SAMPLE ID: TP-9 (1.4) FRAC.: 01A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-9 (1.4) FRAC.: 01B COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	10	2.0	mg/kg	4.0		05/26/94	EPA7421

SAMPLE ID: TP-9 (4.8) FRAC.: 02A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-9 (4.8) FRAC.: 02B COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	6.4	2.0	mg/kg	4.0		05/26/94	EPA7421

SAMPLE ID: TP-10 (1.1) FRAC.: 03A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-10 (4.4) FRAC.: 04A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

APPENDIX H

NORTH COAST LABORATORIES LTD.

Date: 06/17/94
Work Order: 94-05-386
Invoice #: 60037919

REPORT

SAMPLE ID: TP-11 (1.6) FRAC.: 05A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-11 (4.4) FRAC.: 06A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-12 (1.6) FRAC.: 07A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-12 (4.3) FRAC.: 08A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-13 (1.5) FRAC.: 09A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

NORTH COAST LABORATORIES LTD.

Date: 06/17/94
Work Order: 94-05-386
Invoice #: 60037919

REPORT

SAMPLE ID: TP-13 (4.5) FRAC.: 10A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-15 (1.4) FRAC.: 11A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	5.0	ug/g	5.0	05/27/94	06/02/94	EPA3550GCFID
| TPHC - Motor Oil	210	50	ug/g	5.0	05/27/94	06/02/94	EPA3550GCFID

SAMPLE ID: TP-15 (4.5) FRAC.: 12A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-16 (1.7) FRAC.: 13A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	17	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	160	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-16 (4.6) FRAC.: 14A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

NORTH COAST LABORATORIES LTD.

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REPORT

SAMPLE ID: TP-17 (1.1) FRAC.: 15A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	3.0	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	35	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-17 (3.6) FRAC.: 16A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-18 (1.5) FRAC.: 17A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-18 (4.5) FRAC.: 18A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: BH-1 FRAC.: 19A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Water	67	50	ug/L	1.0	05/22/94	05/25/94	EPA3510GCFID

NORTH COAST LABORATORIES LTD.

Date: 06/17/94
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REPORT

SAMPLE ID: BH-1 FRAC.: 19B COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	0.043	0.020	mg/L	4.0		05/26/94	EPA7421

SAMPLE ID: BH-1 FRAC.: 19C COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E Water							EPA602
| Benzene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| Toluene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| Ethylbenzene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| m,p Xylene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| o Xylene	ND	0.50	ug/L	1.0		05/25/94	EPA602
TPHC Gasoline - Water	ND	50	ug/L	1.0		05/25/94	EPA5030GCFID

SAMPLE ID: BH-2 FRAC.: 20A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Water							EPA3510GCFID
| TPHC - Diesel	ND	50	ug/L	1.0	05/26/94	05/27/94	EPA3510GCFID
| TPHC - Motor Oil	ND	500	ug/L	1.0	05/26/94	05/27/94	EPA3510GCFID

SAMPLE ID: BH-2 FRAC.: 20B COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA200.7
| Cadmium	ND	0.010	mg/L	1.0		05/25/94	EPA200.7
| Chromium	0.047	0.0050	mg/L	1.0		05/25/94	EPA200.7
| Nickel	0.077	0.020	mg/L	1.0		05/25/94	EPA200.7
| Zinc	0.031	0.020	mg/L	1.0		05/25/94	EPA200.7
Lead	ND	0.020	mg/L	4.0		05/26/94	EPA7421

SAMPLE ID: BH-3 FRAC.: 21A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Water							EPA3510GCFID
| TPHC - Diesel	480	50	ug/L	1.0	05/26/94	05/27/94	EPA3510GCFID

NORTH COAST LABORATORIES LTD.

Date: 06/17/94 REPORT
Work Order: 94-05-386
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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
| TPHC - Motor Oil	1800	500	ug/L	1.0	05/26/94	05/27/94	EPA3510GCFID

SAMPLE ID: BH-3 FRAC.: 21B COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA200.7
| Cadmium	ND	0.010	mg/L	1.0		05/25/94	EPA200.7
| Chromium	0.023	0.0050	mg/L	1.0		05/25/94	EPA200.7
| Nickel	0.034	0.020	mg/L	1.0		05/25/94	EPA200.7
| Zinc	ND	0.020	mg/L	1.0		05/25/94	EPA200.7
Lead	ND	0.020	mg/L	4.0		05/26/94	EPA7421

SAMPLE ID: BH-3 FRAC.: 21C COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Gasoline - Water	ND	50	ug/L	1.0		05/25/94	EPA5030GCFID

SAMPLE ID: BH-3 FRAC.: 21D COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA 601							EPA601
Dichlorodifluoromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chloromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Vinyl chloride	ND	1.0	ug/L	1.0		05/31/94	EPA601
Bromomethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Trichlorofluoromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1-Dichloroethylene	ND	1.0	ug/L	1.0		05/31/94	EPA601
Methylene chloride	ND	1.0	ug/L	1.0		05/31/94	EPA601
t-1,2-Dichloroethylene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1-Dichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chloroform	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1,1-Trichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Carbon tetrachloride	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,2-Dichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Trichloroethylene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,2-Dichloropropane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Bromodichloromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
trans-1,3-Dichloroprope	ND	1.0	ug/L	1.0		05/31/94	EPA601

NORTH COAST LABORATORIES LTD.

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
cis-1,3-Dichloropropene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1,2-Trichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Tetrachloroethene	ND	1.0	ug/L	1.0		05/31/94	EPA601
Dibromochloromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
Bromoform	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1,2,2Tetrachloroethan	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,3-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,4-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,2-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
EPA 602							EPA602
Benzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
Toluene	ND	1.0	ug/L	1.0		05/31/94	EPA602
Chlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
Ethylbenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
m,p Xylene	ND	0.50	ug/L	1.0		05/31/94	EPA602
o Xylene	ND	0.50	ug/L	1.0		05/31/94	EPA602
1,3-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
1,4-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
1,2-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602

SAMPLE ID: BH-4 FRAC.: 22A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Water							EPA3510GCFID
| TPHC - Diesel	ND	50	ug/L	1.0	05/26/94	05/27/94	EPA3510GCFID
| TPHC - Motor Oil	ND	500	ug/L	1.0	05/26/94	05/27/94	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 23A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E Water							EPA602
| Benzene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| Toluene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| Ethylbenzene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| m,p Xylene	ND	0.50	ug/L	1.0		05/25/94	EPA602
| o Xylene	ND	0.50	ug/L	1.0		05/25/94	EPA602
EPA 601							EPA601
Dichlorodifluoromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chloromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Vinyl chloride	ND	1.0	ug/L	1.0		05/31/94	EPA601
Bromomethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Trichlorofluoromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1-Dichloroethylene	ND	1.0	ug/L	1.0		05/31/94	EPA601
Methylene chloride	ND	1.0	ug/L	1.0		05/31/94	EPA601
t-1,2-Dichloroethylene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1-Dichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chloroform	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1,1-Trichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Carbon tetrachloride	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,2-Dichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Trichloroethylene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,2-Dichloropropane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Bromodichloromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
trans-1,3-Dichloroprope	ND	1.0	ug/L	1.0		05/31/94	EPA601
cis-1,3-Dichloropropene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1,2-Trichloroethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Tetrachloroethene	ND	1.0	ug/L	1.0		05/31/94	EPA601
Dibromochloromethane	ND	1.0	ug/L	1.0		05/31/94	EPA601
Chlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
Bromoform	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,1,2,2Tetrachloroethan	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,3-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,4-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
1,2-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA601
EPA 602							EPA602
Benzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
Toluene	ND	1.0	ug/L	1.0		05/31/94	EPA602
Chlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
Ethylbenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
m,p Xylene	ND	0.50	ug/L	1.0		05/31/94	EPA602
o Xylene	ND	0.50	ug/L	1.0		05/31/94	EPA602
1,3-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
1,4-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
1,2-Dichlorobenzene	ND	1.0	ug/L	1.0		05/31/94	EPA602
EPA Metals(Cd,Cr,Ni,Zn)							EPA200.7
Cadmium	ND	0.010	mg/L	1.0		05/25/94	EPA200.7
Chromium	ND	0.0050	mg/L	1.0		05/25/94	EPA200.7
Nickel	ND	0.020	mg/L	1.0		05/25/94	EPA200.7
Zinc	0.025	0.020	mg/L	1.0		05/25/94	EPA200.7
Lead	ND	0.0050	mg/L	1.0		05/26/94	EPA7421

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Gasoline - Water	ND	50	ug/L	1.0		05/25/94	EPA5030GCFID

SAMPLE ID: Lab. Control Sample FRAC.: 24A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E Water							EPA602
| Benzene	104	N/A	% Rec	1.0		05/25/94	EPA602
| Toluene	103	N/A	% Rec	1.0		05/25/94	EPA602
| Ethylbenzene	106	N/A	% Rec	1.0		05/25/94	EPA602
| m,p Xylene	106	N/A	% Rec	1.0		05/25/94	EPA602
| o Xylene	105	N/A	% Rec	1.0		05/25/94	EPA602
EPA 601							EPA601
Dichlorodifluoromethane	107	N/A	% Rec	1.0		05/31/94	EPA601
Chloromethane	112	N/A	% Rec	1.0		05/31/94	EPA601
Vinyl chloride	107	N/A	% Rec	1.0		05/31/94	EPA601
Bromomethane	112	N/A	% Rec	1.0		05/31/94	EPA601
Chloroethane	109	N/A	% Rec	1.0		05/31/94	EPA601
Trichlorofluoromethane	108	N/A	% Rec	1.0		05/31/94	EPA601
1,1-Dichloroethylene	104	N/A	% Rec	1.0		05/31/94	EPA601
Methylene chloride	103	N/A	% Rec	1.0		05/31/94	EPA601
t-1,2-Dichloroethylene	98.8	N/A	% Rec	1.0		05/31/94	EPA601
1,1-Dichloroethane	103	N/A	% Rec	1.0		05/31/94	EPA601
Chloroform	106	N/A	% Rec	1.0		05/31/94	EPA601
1,1,1-Trichloroethane	102	N/A	% Rec	1.0		05/31/94	EPA601
Carbon tetrachloride	103	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichloroethane	102	N/A	% Rec	1.0		05/31/94	EPA601
Trichloroethylene	98.8	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichloropropane	103	N/A	% Rec	1.0		05/31/94	EPA601
Bromodichloromethane	106	N/A	% Rec	1.0		05/31/94	EPA601
trans-1,3-Dichloroprope	105	N/A	% Rec	1.0		05/31/94	EPA601
cis-1,3-Dichloropropene	106	N/A	% Rec	1.0		05/31/94	EPA601
1,1,2-Trichloroethane	109	N/A	% Rec	1.0		05/31/94	EPA601
Tetrachloroethene	101	N/A	% Rec	1.0		05/31/94	EPA601
Dibromochloromethane	104	N/A	% Rec	1.0		05/31/94	EPA601
Chlorobenzene	108	N/A	% Rec	1.0		05/31/94	EPA601
Bromoform	107	N/A	% Rec	1.0		05/31/94	EPA601
1,1,2,2Tetrachloroethan	107	N/A	% Rec	1.0		05/31/94	EPA601
1,3-Dichlorobenzene	113	N/A	% Rec	1.0		05/31/94	EPA601
1,4-Dichlorobenzene	113	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichlorobenzene	107	N/A	% Rec	1.0		05/31/94	EPA601
EPA 602							EPA602

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Benzene	107	N/A	% Rec	1.0		05/31/94	EPA602
Toluene	106	N/A	% Rec	1.0		05/31/94	EPA602
Chlorobenzene	101	N/A	% Rec	1.0		05/31/94	EPA602
Ethylbenzene	113	N/A	% Rec	1.0		05/31/94	EPA602
m,p Xylene	108	N/A	% Rec	1.0		05/31/94	EPA602
o Xylene	104	N/A	% Rec	1.0		05/31/94	EPA602
1,3-Dichlorobenzene	106	N/A	% Rec	1.0		05/31/94	EPA602
1,4-Dichlorobenzene	106	N/A	% Rec	1.0		05/31/94	EPA602
1,2-Dichlorobenzene	106	N/A	% Rec	1.0		05/31/94	EPA602
EPA Metals(Cd,Cr,Ni,Zn)							EPA200.7
| Cadmium	96.8	N/A	% Rec	1.0		05/25/94	EPA200.7
| Chromium	101	N/A	% Rec	1.0		05/25/94	EPA200.7
| Nickel	106	N/A	% Rec	1.0		05/25/94	EPA200.7
| Zinc	96.7	N/A	% Rec	1.0		05/25/94	EPA200.7
Lead	102	N/A	% Rec	1.0		05/26/94	EPA7421
TPHC Gasoline - Water	116	N/A	% Rec	1.0		05/25/94	EPA5030GCFID

SAMPLE ID: Blank FRAC.: 25A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	ND	2.0	mg/kg	4.0		05/26/94	EPA7421
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	ND	1.0	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	ND	10	ug/g	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: Lab. Control Sample FRAC.: 26A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	123	N/A	% Rec	4.0		05/26/94	EPA7421
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	100	N/A	% Rec	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	98.6	N/A	% Rec	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: TP-17 (1.1) DUPE FRAC.: 27A COLLECTED: 05/18/94 RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	3.2	1.0	ug/g	1.0	05/27/94	06/07/94	EPA3550GCFID
| TPHC - Motor Oil	28	10	ug/g	1.0	05/27/94	06/07/94	EPA3550GCFID

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SAMPLE ID: Matrix Spike FRAC.: 29A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Soil							EPA3550GCFID
| TPHC - Diesel	77.1	N/A	% Rec	1.0	05/27/94	06/01/94	EPA3550GCFID
| TPHC - Motor Oil	95.0	N/A	% Rec	1.0	05/27/94	06/01/94	EPA3550GCFID

SAMPLE ID: Matrix Spike FRAC.: 31A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil - Water							EPA3510GCFID
| TPHC - Diesel	96.0	N/A	% Rec	1.0	05/26/94	05/26/94	EPA3510GCFID
| TPHC - Motor Oil	91.8	N/A	% Rec	1.0	05/26/94	05/26/94	EPA3510GCFID

SAMPLE ID: Matrix Spike FRAC.: 33A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E Water							EPA602
| Benzene	95.6	N/A	% Rec	1.0		05/26/94	EPA602
| Toluene	96.0	N/A	% Rec	1.0		05/26/94	EPA602
| Ethylbenzene	93.1	N/A	% Rec	1.0		05/26/94	EPA602
| m,p Xylene	93.2	N/A	% Rec	1.0		05/26/94	EPA602
| o Xylene	90.6	N/A	% Rec	1.0		05/26/94	EPA602
TPHC Gasoline - Water	108	N/A	% Rec	1.0		05/26/94	EPA5030GCFID

SAMPLE ID: Matrix Spike Dupe FRAC.: 34A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E Water							EPA602
| Benzene	96.5	N/A	% Rec	1.0		05/26/94	EPA602
| Toluene	94.7	N/A	% Rec	1.0		05/26/94	EPA602
| Ethylbenzene	93.0	N/A	% Rec	1.0		05/26/94	EPA602
| m,p Xylene	91.8	N/A	% Rec	1.0		05/26/94	EPA602
| o Xylene	90.8	N/A	% Rec	1.0		05/26/94	EPA602
TPHC Gasoline - Water	104	N/A	% Rec	1.0		05/26/94	EPA5030GCFID

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SAMPLE ID: Matrix Spike FRAC.: 35A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA 601							EPA601
Dichlorodifluoromethane	96.8	N/A	% Rec	1.0		05/31/94	EPA601
Chloromethane	95.1	N/A	% Rec	1.0		05/31/94	EPA601
Vinyl chloride	108	N/A	% Rec	1.0		05/31/94	EPA601
Bromomethane	107	N/A	% Rec	1.0		05/31/94	EPA601
Chloroethane	107	N/A	% Rec	1.0		05/31/94	EPA601
Trichlorofluoromethane	110	N/A	% Rec	1.0		05/31/94	EPA601
1,1-Dichloroethylene	111	N/A	% Rec	1.0		05/31/94	EPA601
Methylene chloride	115	N/A	% Rec	1.0		05/31/94	EPA601
t-1,2-Dichloroethylene	113	N/A	% Rec	1.0		05/31/94	EPA601
1,1-Dichloroethane	113	N/A	% Rec	1.0		05/31/94	EPA601
Chloroform	112	N/A	% Rec	1.0		05/31/94	EPA601
1,1,1-Trichloroethane	109	N/A	% Rec	1.0		05/31/94	EPA601
Carbon tetrachloride	112	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichloroethane	108	N/A	% Rec	1.0		05/31/94	EPA601
Trichloroethylene	105	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichloropropane	110	N/A	% Rec	1.0		05/31/94	EPA601
Bromodichloromethane	116	N/A	% Rec	1.0		05/31/94	EPA601
trans-1,3-Dichloroprope	119	N/A	% Rec	1.0		05/31/94	EPA601
cis-1,3-Dichloropropene	117	N/A	% Rec	1.0		05/31/94	EPA601
1,1,2-Trichloroethane	118	N/A	% Rec	1.0		05/31/94	EPA601
Tetrachloroethene	114	N/A	% Rec	1.0		05/31/94	EPA601
Dibromochloromethane	121	N/A	% Rec	1.0		05/31/94	EPA601
Chlorobenzene	118	N/A	% Rec	1.0		05/31/94	EPA601
Bromoform	126	N/A	% Rec	1.0		05/31/94	EPA601
1,1,2,2Tetrachloroethan	122	N/A	% Rec	1.0		05/31/94	EPA601
1,3-Dichlorobenzene	119	N/A	% Rec	1.0		05/31/94	EPA601
1,4-Dichlorobenzene	123	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichlorobenzene	112	N/A	% Rec	1.0		05/31/94	EPA601
EPA 602							EPA602
Benzene	112	N/A	% Rec	1.0		05/31/94	EPA602
Toluene	110	N/A	% Rec	1.0		05/31/94	EPA602
Chlorobenzene	116	N/A	% Rec	1.0		05/31/94	EPA602
Ethylbenzene	103	N/A	% Rec	1.0		05/31/94	EPA602
m,p Xylene	115	N/A	% Rec	1.0		05/31/94	EPA602
o Xylene	112	N/A	% Rec	1.0		05/31/94	EPA602
1,3-Dichlorobenzene	111	N/A	% Rec	1.0		05/31/94	EPA602
1,4-Dichlorobenzene	110	N/A	% Rec	1.0		05/31/94	EPA602
1,2-Dichlorobenzene	110	N/A	% Rec	1.0		05/31/94	EPA602

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SAMPLE ID: Matrix Spike Dupe FRAC.: 36A COLLECTED: N/A RECEIVED: 05/18/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA 601							EPA601
Dichlorodifluoromethane	94.7	N/A	% Rec	1.0		05/31/94	EPA601
Chloromethane	94.2	N/A	% Rec	1.0		05/31/94	EPA601
Vinyl chloride	107	N/A	% Rec	1.0		05/31/94	EPA601
Bromomethane	107	N/A	% Rec	1.0		05/31/94	EPA601
Chloroethane	111	N/A	% Rec	1.0		05/31/94	EPA601
Trichlorofluoromethane	112	N/A	% Rec	1.0		05/31/94	EPA601
1,1-Dichloroethylene	115	N/A	% Rec	1.0		05/31/94	EPA601
Methylene chloride	119	N/A	% Rec	1.0		05/31/94	EPA601
t-1,2-Dichloroethylene	118	N/A	% Rec	1.0		05/31/94	EPA601
1,1-Dichloroethane	120	N/A	% Rec	1.0		05/31/94	EPA601
Chloroform	116	N/A	% Rec	1.0		05/31/94	EPA601
1,1,1-Trichloroethane	111	N/A	% Rec	1.0		05/31/94	EPA601
Carbon tetrachloride	113	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichloroethane	110	N/A	% Rec	1.0		05/31/94	EPA601
Trichloroethylene	108	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichloropropane	105	N/A	% Rec	1.0		05/31/94	EPA601
Bromodichloromethane	113	N/A	% Rec	1.0		05/31/94	EPA601
trans-1,3-Dichloroprope	117	N/A	% Rec	1.0		05/31/94	EPA601
cis-1,3-Dichloropropene	113	N/A	% Rec	1.0		05/31/94	EPA601
1,1,2-Trichloroethane	120	N/A	% Rec	1.0		05/31/94	EPA601
Tetrachloroethene	109	N/A	% Rec	1.0		05/31/94	EPA601
Dibromochloromethane	117	N/A	% Rec	1.0		05/31/94	EPA601
Chlorobenzene	115	N/A	% Rec	1.0		05/31/94	EPA601
Bromoform	129	N/A	% Rec	1.0		05/31/94	EPA601
1,1,2,2Tetrachloroethan	121	N/A	% Rec	1.0		05/31/94	EPA601
1,3-Dichlorobenzene	119	N/A	% Rec	1.0		05/31/94	EPA601
1,4-Dichlorobenzene	117	N/A	% Rec	1.0		05/31/94	EPA601
1,2-Dichlorobenzene	112	N/A	% Rec	1.0		05/31/94	EPA601
EPA 602							EPA602
Benzene	115	N/A	% Rec	1.0		05/31/94	EPA602
Toluene	112	N/A	% Rec	1.0		05/31/94	EPA602
Chlorobenzene	111	N/A	% Rec	1.0		05/31/94	EPA602
Ethylbenzene	116	N/A	% Rec	1.0		05/31/94	EPA602
m,p Xylene	115	N/A	% Rec	1.0		05/31/94	EPA602
o Xylene	113	N/A	% Rec	1.0		05/31/94	EPA602
1,3-Dichlorobenzene	113	N/A	% Rec	1.0		05/31/94	EPA602
1,4-Dichlorobenzene	112	N/A	% Rec	1.0		05/31/94	EPA602
1,2-Dichlorobenzene	114	N/A	% Rec	1.0		05/31/94	EPA602

APPENDIX H

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9405 385

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: 1053 Northwestern Ave.
Fortuna, CA 95540
Phone: ______ Sampled By: DP, JLA, MEL
Copies of Report to: Marty Lay, SHN,
812 W. Wabash, Eureka, CA
95501, 441-8855

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

TAT: ☒ ~~24–48 Hr~~ (100% SUR) ☐ 5D (50% SUR)
☒ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

SPECIAL INSTRUCTIONS:

PROJECT INFORMATION

Project Number: 930121.100
Project Name: No. Co. Ex
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/OTHER	NO. OF CONTAINERS	TPH/G/BTEX	TPH D	Pb	TPH/BTEX/HMO	REMARKS/SAMPLE CONDITION
1	TP-1 (1.5)	5/17/94	1005	Soil	3	X	X	X		Cold + intact
2	TP-1 (4.0)	↓	1000	↓	3	X	X	X		↓
3	TP-2 (1.4)	↓	[illegible]	↓	3	X	X	X		↓
4	TP-3 (4.2)	↓	1145	↓	3	X	X	X		↓
5	TP-3 (1.0)	↓	1105	↓	3	X	X	X		↓
6	TP-3 (3.2)	↓	1110	↓	3	X	X	X		↓
7	TP-3 (4.5)	↓	1115	↓	3	X	X	X		↓
8	TP-4 (2.0)	↓	1345	↓	1				X	↓
9	TP-4 (4.5)	↓	1350	↓	1				X	↓
10	TP-5 (1.2)	↓	1230	↓	1				X	↓

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Lewis David R. Lewis	1531 5/18/94	[illegible signature]	5/18/94 1535

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus (Hand)

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 94 05 385

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: 1053 Northwestern Ave.
Fortuna, CA 95540
Phone: _____ Sampled By: DP, JLA, MEL
Copies of Report to: Marty Lay, SHN,
812 W. Wabash, Eureka, CA
95501, 441-8855

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

TAT: ☒ 24-48 Hr (100% SUR) ☐ 5D (50% SUR)
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

SPECIAL INSTRUCTIONS: _____

APPENDIX H

PROJECT INFORMATION
Project Number: 930121.100
Project Name: No Co Ex
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/ OTHER	NO. OF CONTAINERS	ANALYSIS REQUEST: TPHD (TOTAL)	8010/8020	TPHG
11	TP-5 (4.4)	5/17/94	1210	Soil	1	X		
12	TP-6 [redacted] (1.7)		1415		1	X		
13	TP-6 (4.3)		1430		1	X		
14	TP-8 [redacted] (2.7)		1505		1	X		
15	TP-8 (4.5)		1510		1	X		
16	TP-14 (2.2)		1520		1	X		
17	TP-14 (4.2)		1525		1	X		
18	TP-8 (4.5)		1700	Soil	2		X	X
19	TP-7 (1.2)	5/18/94	1045	Soil	1	X		
20	TP-7 (4.9)	5/18/94	1040	Soil	1	X		

REMARKS/SAMPLE CONDITION: cold + intact

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Lewis	13 31 5/18/94	Denise Bradford	5/19/94 1535

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus (Hand)

APPENDIX H

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9405-386

Attention: Dennis Scott
Results & Invoice to: Eel River [illegible]
Address: 10-3 N. [illegible] Ave.
[illegible], CA [illegible]
Phone: ______ Sampled By: [illegible]
Copies of Report to: Mary Lee [illegible]
312 W. Wabash, [illegible] CA
95501 441-3955

PROJECT INFORMATION

Project Number: 730121.100
Project Name: ______
Purchase Order Number: ______

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

TAT: ☐ 24–48 Hr (100% SUR) ☐ 5D (50% SUR)
☒ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

SPECIAL INSTRUCTIONS: ______

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/ OTHER	NO. OF CONTAINERS	TPHD/TPHMO	Pb	REMARKS/SAMPLE CONDITION
1	TP-9 (1.4)	5/13/94	1100	soil	2	X	X	cold [illegible]
2	TP-9 (4.8)	↓	1055	↓	2	X	X	↓
3	TP-10 (1.1)	↓	1055	↓	1	X		↓
4	TP-10 (4.4)	↓	1130	↓	1	X		↓
5	TP-11 (1.6')	↓	1005	↓	1	X		↓
6	TP-11 (4.4)	↓	1000	↓	1	X		↓
7	TP-12 (1.6)	↓	0950	↓	1	X		↓
8	TP-12 (4.3)	↓	0945	↓	1	X		↓
9	TP-13 (1.5)	↓	0925	↓	1	X		↓
10	TP-13 (4.5)	↓	0920	↓	1	X		↓

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. [illegible] David R. [illegible]	1531 5/13/94	[illegible]	[illegible] 1535

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus (Hand)

Chain of Custody

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

LABORATORY NUMBER: 94-05-386

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: 1053 Northwestern Ave.
Fortuna, CA 95540
Phone: _____ Sampled By: DP, JLA
Copies of Report to: Marty Lay, SHN, 812 W. Wabash, Eureka, CA 95501, 441-8855

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

TAT: ☐ 24–48 Hr (100% SUR) ☐ 5D (50% SUR)
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

SPECIAL INSTRUCTIONS:
Metals include: Cadmium, Chromium, Nickel, Lead, Zinc

PROJECT INFORMATION
Project Number: 930121.100
Project Name: _____
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/ OTHER	NO. OF CONTAINERS	TPHD/TPHMO	TPHD	TPH/C-1 BTEX	PAs (total)	Metals (Cd, Cr, Ni, Pb, Zn)
11	TP-15 (1.4)	5/13/94	0910	soil	1	X				
12	TP-15 (4.5)		0905		1	X				
13	TP-16 (1.7)		1240		1	X				
14	TP-16 (4.6)		1235		1	X				
15	TP-17 (1.1)		1230		1	X				
16	TP-17 (3.6)		1225		1	X				
17	TP-18 (1.5)		1220		1	X				
18	TP-18 (4.5)		1215		1	X				
19	BH-1		1106-1110	water	4		X	X	X	
20	BH-2		1226-1228	water	2	X				X

REMARKS/SAMPLE CONDITION
cold + intact
+ TB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Lewis David R. Lewis	1531 5/18/94	Denise Rudland	5/19/94 1535

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus

APPENDIX H

Chain of Custody

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

LABORATORY NUMBER: 9405386

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: 1053 Northwestern Ave.
Fortuna, CA 95540
Phone: _____ Sampled By: DP, MEL, JLA
Copies of Report to: Marty Lay, SHN, 812 W. Wabash, Eureka, CA 95501, 441-8855

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

TAT: ☐ 24–48 Hr (100% SUR) ☐ 5D (50% SUR)
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

SPECIAL INSTRUCTIONS:
Metals include: Cadmium, Chromium, Nickel, Lead, Zinc

PROJECT INFORMATION
Project Number: 930121.100
Project Name: _____
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/ OTHER	NO. OF CONTAINERS	ANALYSIS REQUEST: 8.T PHD/TPHMO	Metals (Cd, Cr, Ni, Pb, Zn)	TPHG	601/602
21	BH-3	5/18/94	1440	water	6	X	X	X	X
22	BH-4 1 L brown	5/18/94	1420	water	1	X			

REMARKS/SAMPLE CONDITION: cold + intact
+2 TB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Pain David R. Pain	1531 5/18/94	Denise Bradford	5/18/94 1535

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus Hand

APPENDIX H

APPENDIX H

NORTH COAST LABORATORIES LTD.

Date: 04/20/94 REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 94-04-170

INVOICE # 60036926

Attn: Dennis Scott

WORK ID: 930121.100/North Coast Export

REPORT CERTIFIED BY

Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	TP-ST/5'

Comments:

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX H

NORTH COAST LABORATORIES LTD.

Date: 04/20/94 REPORT
Work Order: 94-04-170
Invoice #: 60036926

SAMPLE ID: TP-ST/5' FRAC.: 01A COLLECTED: 02/17/94 RECEIVED: 04/08/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Cam Extraction	04/14/94						
Chromium	0.56	0.20	mg/L	10		04/18/94	EPA200.7

AVOID VERBAL ORDERS

"SAY IT IN WRITING"

DATE: 4/8/94 NO.:

TO: Denise

94-02-404-04B please log this sample in for STLC Cr on a normal TAT per Marty Lay/SHN (4/8/94 9:50 am)

SIGNED: [signature]

NOTICE—Keep This For Reference

TOPS FORM 3373

LITHO IN U.S.A.

Chain of Custody

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Attention: DENNIS SCOTT
Results & Invoice to: DENNIS SCOTT
Address: 1053 NORTHWESTERN AVE. FORTUNA, CA 95540
Phone: 725-6911 Sampled By: PB/RD
Copies of Report to: MARTY LAY SHN EUREKA

REPORTING REQUIREMENTS: State
Preliminary: FAX ☐ Verbal ☐ By:
Final Report: FAX ☐ Verbal ☐ By:

TAT: ☐ 24–48 Hr (100% SUR) ☐ 5D
☒ STD (2–3 Wk) ☐ Other:

PRIOR AUTHORIZATION IS REQUIRED

PROJECT INFORMATION

Project Number: 930121.100
Project Name: NORTH COAST EXPORTS
Purchase Order Number: ARCATA, CA

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/ OTHER	NO. OF CONTAINERS	TPHD	TPHG/BTEX	+ Pb		TPH-MO	(5) METALS		TPH-IR	5520 C&F
1	TP-FTA1/2'	2/17/94	0850	SOIL	3	X	X	X						
2	TP-FTA1/5'	↓	0900	↓	3	X	X	X						
3	TP-ST/2'		0925		[illegible]					X	X		X	
4	TP-ST/5'		0935		[illegible]					X	X		X	
5	TP-VM4/2'		1020		3					X	X		X	
6	TP-VM4/4'		1022		3					X	X		X	
7	TP-DBW/2'		1045		[illegible]					X	X		X	
8	TP-DBW/5'		1050		[illegible]					X	X		X	

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[signature]	2/17/94 1555	Denise Bradford	2/17/94 1555

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☒ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus Hand

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX H

RECEIVED MAR 03 1994

NORTH COAST LABORATORIES LTD.

DATE: February 28, 1994

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

ATTENTION: Dennis Scott

NCL: 94-02-404

ADDENDUM TO CHEMICAL EXAMINATION REPORT

PARAMETER	NOTATIONS
TPHC Diesel	Samples 01A and 02A contain material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
TPHC Motor Oil	Samples 05C and 07C contain large individual peaks in the motor oil range, in addition to the motor oil present. All motor oil results reported represent the amount of material in the motor oil range of molecular weights only.
TPHC Gas	Samples 01B and 02B do not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In our judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the results may be variable. The results reported represent the amount of material in the gasoline range.
BTXE	Some detection limits were raised due to matrix interference. Sample 02B was diluted and detection limits raised due to matrix interference.

Roanne Holst
Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

APPENDIX H

NORTH COAST LABORATORIES LTD.

Date: 02/28/94 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 94-02-404

INVOICE # 60035931

Attn: Dennis Scott

WORK ID: 930121.100/North Coast Export

REPORT CERTIFIED BY

Jody Ell
Richard Snell (FOR R.S.)
Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	TP-FTA1/2'
01	TP-FTA1/2'
01	TP-FTA1/2'
02	TP-FTA1/5'
02	TP-FTA1/5'
02	TP-FTA1/5'
03	TP-ST/2'
03	TP-ST/2'
03	TP-ST/2'
04	TP-ST/5'
04	TP-ST/5'
04	TP-ST/5'
05	TP-VM4/2'
05	TP-VM4/2'
05	TP-VM4/2'
06	TP-VM4/4'
06	TP-VM4/4'
06	TP-VM4/4'
07	TP-DBW/2'
07	TP-DBW/2'
07	TP-DBW/2'
08	TP-DBW/5'
08	TP-DBW/5'
08	TP-DBW/5'
09	TP-DBE/2'
09	TP-DBE/2'

Comments:

Notes and Definitions:

Limit = Detection Limit
ND = None Detected

NORTH COAST LABORATORIES LTD.

Date: 02/28/94
Work Order: 94-02-404
Invoice #: 60035931

REPORT

SAMPLE IDENTIFICATION

Fraction	Sample Description
10	TP-DA1/2'
11	TP-DA2/2'

NORTH COAST LABORATORIES LTD.

Date: 02/28/94 REPORT Page 3 of 8
Work Order: 94-02-404
Invoice #: 60035931

SAMPLE ID: TP-FTA1/2' FRAC.: 01A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	500	1.0	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

SAMPLE ID: TP-FTA1/2' FRAC.: 01B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.0050	ug/g	1.0	02/18/94	02/19/94	EPA8020
| Toluene	ND	0.0050	ug/g	1.0	02/18/94	02/19/94	EPA8020
| Ethylbenzene	ND	0.030	ug/g	1.0	02/18/94	02/19/94	EPA8020
| m,p Xylene	ND	0.030	ug/g	1.0	02/18/94	02/19/94	EPA8020
| o Xylene	ND	0.030	ug/g	1.0	02/18/94	02/19/94	EPA8020
TPHC Gasoline - Soil	19	1.0	ug/g	1.0	02/18/94	02/19/94	EPA5030GCFID

SAMPLE ID: TP-FTA1/2' FRAC.: 01C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	12	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-FTA1/5' FRAC.: 02A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Diesel - Soil	250	1.0	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

SAMPLE ID: TP-FTA1/5' FRAC.: 02B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E - Soil							EPA8020
| Benzene	ND	0.10	ug/g	20	02/18/94	02/19/94	EPA8020
| Toluene	ND	0.10	ug/g	20	02/18/94	02/19/94	EPA8020
| Ethylbenzene	ND	0.50	ug/g	20	02/18/94	02/19/94	EPA8020
| m,p Xylene	ND	0.50	ug/g	20	02/18/94	02/19/94	EPA8020
| o Xylene	ND	0.50	ug/g	20	02/18/94	02/19/94	EPA8020
TPHC Gasoline - Soil	220	20	ug/g	20	02/18/94	02/19/94	EPA5030GCFID

NORTH COAST LABORATORIES LTD.

Date: 02/28/94 REPORT Page 4 of 8
Work Order: 94-02-404
Invoice #: 60035931

SAMPLE ID: TP-FTA1/5' FRAC.: 02C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	8.0	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-ST/2' FRAC.: 03A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	ND	50	ug/g	1.0		02/25/94	SM5520-C,E,F

SAMPLE ID: TP-ST/2' FRAC.: 03B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA6010
| Cadmium	ND	1.0	mg/kg	1.0		02/25/94	EPA6010
| Chromium	82	2.0	mg/kg	1.0		02/25/94	EPA6010
| Nickel	98	5.0	mg/kg	1.0		02/25/94	EPA6010
| Zinc	61	5.0	mg/kg	1.0		02/25/94	EPA6010
Lead	8.4	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-ST/2' FRAC.: 03C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Motor Oil	ND	10	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

SAMPLE ID: TP-ST/5' FRAC.: 04A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	ND	50	ug/g	1.0		02/25/94	SM5520-C,E,F

SAMPLE ID: TP-ST/5' FRAC.: 04B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA6010
| Cadmium	ND	1.0	mg/kg	1.0		02/25/94	EPA6010
| Chromium	99	2.0	mg/kg	1.0		02/25/94	EPA6010
| Nickel	110	5.0	mg/kg	1.0		02/25/94	EPA6010

NORTH COAST LABORATORIES LTD.

Date: 02/28/94 REPORT Page 5 of 8
Work Order: 94-02-404
Invoice #: 60035931

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
| Zinc	62	5.0	mg/kg	1.0		02/25/94	EPA6010
Lead	9.1	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-ST/5' FRAC.: 04C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Motor Oil	ND	10	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

SAMPLE ID: TP-VM4/2' FRAC.: 05A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	82	50	ug/g	1.0		02/25/94	SM5520-C,E,F

SAMPLE ID: TP-VM4/2' FRAC.: 05B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA6010
| Cadmium	ND	1.0	mg/kg	1.0		02/25/94	EPA6010
| Chromium	25	2.0	mg/kg	1.0		02/25/94	EPA6010
| Nickel	29	5.0	mg/kg	1.0		02/25/94	EPA6010
| Zinc	38	5.0	mg/kg	1.0		02/25/94	EPA6010
Lead	20	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-VM4/2' FRAC.: 05C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Motor Oil	140	10	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

SAMPLE ID: TP-VM4/4' FRAC.: 06A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	50	50	ug/g	1.0		02/25/94	SM5520-C,E,F

NORTH COAST LABORATORIES LTD.

Date: 02/28/94
Work Order: 94-02-404
Invoice #: 60035931

REPORT

SAMPLE ID: TP-VM4/4' FRAC.: 06B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA6010
| Cadmium	ND	1.0	mg/kg	1.0		02/25/94	EPA6010
| Chromium	76	2.0	mg/kg	1.0		02/25/94	EPA6010
| Nickel	88	5.0	mg/kg	1.0		02/25/94	EPA6010
| Zinc	74	5.0	mg/kg	1.0		02/25/94	EPA6010
Lead	9.7	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-VM4/4' FRAC.: 06C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Motor Oil	ND	10	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

SAMPLE ID: TP-DBW/2' FRAC.: 07A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	82	50	ug/g	1.0		02/25/94	SM5520-C,E,F

SAMPLE ID: TP-DBW/2' FRAC.: 07B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA6010
| Cadmium	ND	1.0	mg/kg	1.0		02/25/94	EPA6010
| Chromium	25	2.0	mg/kg	1.0		02/25/94	EPA6010
| Nickel	28	5.0	mg/kg	1.0		02/25/94	EPA6010
| Zinc	30	5.0	mg/kg	1.0		02/25/94	EPA6010
Lead	4.8	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-DBW/2' FRAC.: 07C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Motor Oil	130	10	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

NORTH COAST LABORATORIES LTD.

Date: 02/28/94
Work Order: 94-02-404
Invoice #: 60035931

REPORT

SAMPLE ID: TP-DBW/5' FRAC.: 08A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	ND	50	ug/g	1.0		02/25/94	SM5520-C,E,F

SAMPLE ID: TP-DBW/5' FRAC.: 08B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA6010
| Cadmium	ND	1.0	mg/kg	1.0		02/25/94	EPA6010
| Chromium	80	2.0	mg/kg	1.0		02/25/94	EPA6010
| Nickel	87	5.0	mg/kg	1.0		02/25/94	EPA6010
| Zinc	58	5.0	mg/kg	1.0		02/25/94	EPA6010
Lead	6.4	2.0	mg/kg	4.0		02/22/94	EPA7421

SAMPLE ID: TP-DBW/5' FRAC.: 08C COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Motor Oil	ND	10	ug/g	1.0	02/18/94	02/23/94	EPA3550GCFID

SAMPLE ID: TP-DBE/2' FRAC.: 09A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	58	50	ug/g	1.0		02/25/94	SM5520-C,E,F

SAMPLE ID: TP-DBE/2' FRAC.: 09B COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA6010
| Cadmium	ND	1.0	mg/kg	1.0		02/25/94	EPA6010
| Chromium	22	2.0	mg/kg	1.0		02/25/94	EPA6010
| Nickel	45	5.0	mg/kg	1.0		02/25/94	EPA6010
| Zinc	270	5.0	mg/kg	1.0		02/25/94	EPA6010
Lead	51	4.0	mg/kg	8.0		02/22/94	EPA7421

NORTH COAST LABORATORIES LTD.

Date: 02/28/94 REPORT Page 8 of 8
Work Order: 94-02-404
Invoice #: 60035931

SAMPLE ID: TP-DA1/2' FRAC.: 10A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	ND	50	ug/g	1.0		02/25/94	SM5520-C,E,F

SAMPLE ID: TP-DA2/2' FRAC.: 11A COLLECTED: 02/17/94 RECEIVED: 02/17/94

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tot.Petroleum Hydrocarbons	95	50	ug/g	1.0		02/25/94	SM5520-C,E,F

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

P. 1 of 2

LABORATORY NUMBER: 4U 02 404

Attention: DENNIS SCOTT
Results & Invoice to: DENNIS SCOTT
Address: 1053 NORTHWESTERN AVE.
FORTUNA, CA 95540
Phone: 725-6911 Sampled By: PB/BD
Copies of Report to:
MARTY LAY
SHN EUREKA

REPORTING REQUIREMENTS: State Forms ☒
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

TAT: ☐ 24–48 Hr (100% SUR) ☐ 5D (50% SUR)
☒ STD (2–3 Wk) ☐ Other: ________
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

SPECIAL INSTRUCTIONS:

PROJECT INFORMATION
Project Number: 930121,100
Project Name: NORTH COAST EXPORTS
Purchase Order Number: ARCATA, CA

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/ OTHER	NO. OF CONTAINERS	TPHD	TPHG/BTEX	T Pb	TPH-MO	(5) METALS	TPH-IR (5520 C&F)	REMARKS/SAMPLE CONDITION
1	TP-FTA1/2'	2/17/94	0850	SOIL	3	X	X	X				
2	TP-FTA1/5'		0900		3	X	X	X				
3	TP-ST/2'		0925		3				X	X	X	
4	TP-ST/5'		0935		3				X	X	X	
5	TP-VM4/2'		1020		2				X	X	X	
6	TP-VM4/4'		1022		3				X	X	X	
7	TP-DBW/2'		1045		3				X	X	X	
8	TP-DBW/5'		1051		3				X	X	X	

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[signature]	2/17/94 1555	[signature]	2/17/94 15??

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☒ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus Hand

ALL CONTAMINATED NON-AQUEOUS S... PLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 41102 41103 41104

Attention: DENNIS SCOTT
Results & Invoice to:
Address:
Phone: 725-6911 Sampled By: BB/BD
Copies of Report to: MARTY LAY SHN

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

TAT: ☐ 24–48 Hr (100% SUR) ☐ 5D (50% SUR)
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

SPECIAL INSTRUCTIONS:

PROJECT INFORMATION
Project Number: 430121.100
Project Name: NORTH COAST EXPRESS
Purchase Order Number: ARCATA

LAB ID	SAMPLE ID	DATE	TIME	SOIL/WAT/ OTHER	NO. OF CONTAINERS	TPH-IR (EPA 418.1)	5 METALS
9	TP-DBE/2'	3/17/94	1100	SOIL	2	X	X
10	TP-DA1/2'	"	1224	"	1	X	
11	TP-DA2/2'	"	1245	"	1	X	

REMARKS/SAMPLE CONDITION

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Patrick Bassanty	3/17/94 1555		

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Fed-Ex Bus Hand

ALL CONTAMINATED NON-AQUEOUS S PLES WILL BE RETURNED TO CLIENT

APPENDIX H

APPENDIX C

SOIL AND GROUNDWATER SAMPLING METHODOLOGIES

APPENDIX C

SOIL AND GROUNDWATER SAMPLING METHODOLOGIES

SAMPLING PROCEDURES

Sample Collection and Decontamination Procedures

Certain procedures are employed to decontaminate the sampling equipment between samples. This helps to prevent inadvertent introduction of contaminants, to prevent cross contamination between samples, and to ensure the health and safety of sampling personnel. Decontamination procedures used during soil and groundwater sampling are listed below:

- A site safety plan was prepared for the May sampling event and is included as Appendix D.

- Sampling equipment was cleaned, prepared, and handled by OSHA (CFR-1910.120e) trained and certified personnel.

- Disposable latex gloves were worn during handling of all sampling equipment, and changed between samples.

- All downhole drilling equipment (such as hand augers) were washed between use at each sampling location.

- Where soil samples were collected, sampling equipment was washed with laboratory grade detergent and distilled water, and rinsed with distilled water. Samples were collected using a decontaminated, 1.5 inch diameter by 3 inch long stainless brass tubes. The ends of the soil sample tubes were covered with aluminum foil and plastic caps to provide an airtight seal. Latex gloves were worn when handling the soil samples.

- For actual groundwater sample collection, disposable bailers were used to prevent cross contamination between samples. Disposable latex gloves were worn during handling of all sampling equipment and containers, and changed between samples.

- Groundwater samples were collected by discharging water from a disposable bailer directly into glass containers provided by the laboratory. Each volatile organic analysis (VOA) container was held at an angle, and the water was allowed to flow gently into the container until it overflowed. A septum cap was placed, Teflon® side down, on top of the filled container, excluding all headspace from the vial, for the VOC analyses. New latex gloves were worn during sample collection.

Field Quality Assurance/Quality Control (QA/QC) Samples

During soil sampling, quality control samples were collected to check the validity of field and analytical results. Trip blank and duplicate samples were collected, and are described below:

Trip Blank. One trip blank was prepared by exposing a laboratory-prepared VOA full of distilled water to the sampling area atmosphere throughout the field day. At the end of the day it was resealed, and submitted for analysis.

Duplicate. A duplicate sample is one which is collected from the same location and under the same conditions as another sample. Results from a duplicate sample can then be compared to the primary sample to check the reproducibility of laboratory results.

Sample Handling Procedures

Sample Storage and Shipment. After collection, each sample was properly labeled with the sample location, date, time, depth interval, and initials of sampling personnel. After proper labeling, all samples were placed on ice in closed chests, and protected from meltwater using plastic, zip-top bags.

At the end of each sampling day, the sampling personnel transported and delivered the samples to North Coast Laboratories, Ltd., in Arcata, California.

Chain-of-Custody. Each sample was properly documented on chain-of-custody records to ensure timely, correct, and complete analysis for all parameters requested. The chain-of-custody record forms contain the following information:

- Sample Number
- Project Name/Number
- Sampling Date and Time
- Sampler's Name or Initials
- Preservatives Used, if any
- Analyses Requested
- Sample Designation
- Special Handling Requirements

Custody of samples were maintained and documented from the time of sample collection up to completion of the analyses. The custody transfer was documented by the individuals relinquishing and receiving the samples, by signing, dating, and noting the time on the chain-of-custody record.

Once received by the laboratory, laboratory custody procedures applied. The laboratory was responsible for maintaining custody records throughout sample preparation and analysis.

TEMPORARY PIEZOMETERS

Test Pit Boreholes

Temporary piezometers BH-1, BH-2, BH-3, and BH-4 were installed at test pits TP-2, TP-5, TP-8, and TP-14, respectively, for the purpose of collecting "grab" groundwater samples from these locations. Prior to installation of the temporary piezometers, test pits were excavated and logged, and soil samples were collected. The depth to groundwater was determined in the test pits, to predict the depth of the piezometers required for the collection of groundwater samples. After soil sampling was completed, each piezometer test pit was extended laterally, and excavated to depths of between 2.5 and 5 feet. (The bench was excavated to these depths to minimize the depth of subsequent hand augering.) The bench was used as a platform for work associated with hand auger excavation of piezometer boreholes, and piezometer installation, development, and sampling (See Figure 3). Piezometer boreholes were drilled using a hand operated, 3½" diameter by 12" long stainless steel auger with extension rods. Piezometer boreholes BH-1, BH-2, BH-3, and BH-4 were advanced to depths of approximately 7, 12, 12, and 11.5 feet, respectively, below original ground surface, and approximately 2 feet into the water bearing zone.

Installation

Each piezometer was cased with flush-threaded, 2 inch inside diameter, Schedule 40, polyvinyl chloride (PVC) casing, 5 feet of 0.010 inch machine slotted screen, and a PVC slip cap on the bottom. A filter pack of number 2/16 sand was placed opposite the screened section. The remaining annulus of each piezometer borehole was left open.
Total casing depths of piezometers BH-1, BH-2, BH-3, and BH-4 (measured from the top of the PVC casing) were 5, 9, 11, and 9 feet, respectively (depths include the height of PVC casing above the bench). After installation of the temporary casing, each piezometer was allowed to stabilize for approximately 1 to 2 hours, prior to purging and sampling. A schematic of typical, temporary piezometer construction is shown on Figure 3. Top of casings were surveyed to 0.01 feet under the direct supervision of a licensed California Surveyor. Elevations correspond to local datums on Mean Sea Level (MSL).

Purging and Sampling

After installation, each piezometer was purged of approximately 2 well volumes of water (between 1.25 and 2 gallons) using a decontaminated Teflon® bailer, prior to sample collection. A well volume is defined as the water in the well casing plus the water in the filter pack (assumed sand porosity of 35 percent). After recharging for between approximately 15 minutes to 2 hours (depending on piezometer recharge rates), samples were collected from each piezometer by discharging water from a disposable bailer directly into appropriate, laboratory supplied containers. Purge water from piezometer purging and sampling was held in buckets and then discharged into each respective test pit after groundwater samples were collected.

APPENDIX D

SITE SAFETY PLAN

APPENDIX H

SITE SAFETY PLAN

Reference: 930121.100

GENERAL INFORMATION

Project: North Coast Exports

Site Address: 2000 Foster Ave., Arcata

Plan Prepared by: Martin Lay
Date: May 10, 1994

Proposed Dates of
Investigation: May 17-18, 1994

KEY PERSONNEL AND RESPONSIBILITIES

	Name	Tel No.
Project Manager:	Marty Lay	(707)441-8855
Site Safety Supervisor:	Marty Lay	(707)441-8855
Project Geologist:	Johanna Ambler	(707)441-8855
Field Personnel:	Pat Barsanti David Paine Marty Lay Curtis Coburn	

Contractors/Subcontractors: Hake Construction

1.0 INTRODUCTION

This Site Safety Plan (SSP) establishes general safety requirements for limiting personal exposure to potentially hazardous materials. The intent of this SSP is to provide health and safety guidelines for the personal protection of SHN staff, and contractor or subcontractor employees related to hazardous materials operations at the site. The application of this SSP is limited to the activities of scanning for petroleum hydrocarbons in materials during site demolition and grading to identify potential areas of concern for remediation efforts. The soils to be investigated are known to contain gasoline, (TPHG) diesel (TPHD), and motor oil (TPHMO), and suspected to contain aromatic hydrocarbons; Benzene, Toluene, Ethylbenzene, and Xylene (EPA 8020 MOD), resulting from the former industrial use of this site. This SSP shall be implemented immediately upon detection or suspected presence of any contaminants. All site personnel and visitors must read this SSP prior to entering the contamination reduction zone or contamination zone. General OSHA requirements involving the operation of heavy equipment, and working in/or near excavations and trenches will be followed at all times. It is not a focus of this SSP to provide safety guidelines for

general construction activities, excavation activities, or heavy equipment operations.

2.0 HAZARD ANALYSIS

SITE/HAZARD OVERVIEW

Apparent Hazard		Type of Facility		Status of Facility	
Serious		Impoundment		Active	
Moderate	X	Landfill		Inactive	X
Low		Open	X	Unknown	
None		Other	Old Mill Structure		

Waste Type(s)		Waste Characteristics		Type/Form of Hazard	
Gas		Toxic	X	Dust	X
Liquid	X	Corrosive		Liquid	X
Sludge		Ignitable	X	Fumes	X
Solid	X	Volatile	X	Vapors	X
Unknown		Radioactive		Contact	X
Other		Reactive		Respiratory	X
		Unknown		Particulates	X
		Other		IDLH	

Chemical Hazards

The chemical hazards at this site include exposure to gasoline, diesel, and motor oil. Due to the unknown nature of petrochemical hydrocarbons, the chemical hazard at this site may also include exposure to; the petrochemically associated aromatic hydrocarbons of benzene, toluene, ethylbenzene, and xylenes. A chemical hazard identification and assessment table summarizing published physical and toxicological exposure guideline data for the constituents that have been identified or suspected to be potentially present at the site, has been prepared and is contained in this SSP. The published material referenced for this data represents industry standards and includes the most recent information from the National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values and Biological Exposure Indices.

Exposure to these chemical hazards can take place in the form of direct contact with the contaminated soils or water, and ambient air; or inhalation of ambient air in the vicinity of demolition and grading activities or remediation activities such as excavation, boring or soil tilling. The ambient air may contain dispersed chemicals as vapors, fumes or mists, and soil dusts to which the chemicals adhere.

Have all contaminants that may be present on site been identified?
Yes ___ No ___ Unknown X

CHEMICAL HAZARDS ASSESSMENT TABLE

(V) TYPE OF HAZARD PROPERTY

- a - CORROSIVE
- b - FLAMMABLE
- c - TOXIC
- d - VOLATILE
- e - REACTIVE
- f - RADIOACTIVE
- g - CARCINOGENIC
- h - INFECTIOUS

(W) ROUTE OF EXPOSURE

- h - SKIN AND/OR EYE CONTACT
- i - INHALATION
- j - SKIN ABSORBTION
- k - INGESTION

(X) ACUTE EFFECTS

- a - ABDOMINAL PAIN
- b - CENTERAL NERVOUS SYSTEM DEPRESSION
- c - COMATOSE
- d - CONVULSIONS
- e - CONFUSION
- f - DIZZINESS
- g - DIARRHEA
- h - DROWSINESS
- i - EYE IRRITATION
- j - FEVER
- k - HEADACHE
- m - NAUSEA
- n - RESPIRATORY SYSTEM IRRITATION
- o - SKIN IRRITATION
- p - TREMORS
- q - UNCONSIOUSNESS
- r - VOMITING
- s - WEAKNESS
- t - STAGGERING GAIT
- u - DIALATED PUPILS
- v - MUSCLE FATIGUE
- w - INSOMNIA
- x - SWEATING
- y - MENTAL IMPAIRMENT

(Y) CHRONIC EFFECTS

- a - CENTRAL NERVOUS SYSTEM
- b - BLOOD
- c - SKIN
- d - BONE MARROW
- e - EYES
- f - RESPIRATORY SYSTEM
- g - LIVER
- h - KIDNEYS
- i - GASTROINTESTINAL TRACT
- j - FETAL DEFECTS
- k - CARCINOGENIC
- l - SUSPECTED CARCINOGEN
- m - CARDIO VASCULAR SYSTEM

CHEMICAL	PEL/TLV (ppm)	VAPOR PRESSURE (mm)	BOILING POINT (deg F)	SOLUB-ILITY	VAPOR DENSITY (air=1)	SPECIFIC GRAVITY (water=1)	FLASH POINT (deg F)	MELTING POINT (deg F)	HAZARD TYPE(V)	EXPOSURE ROUTE(W)	EFFECTS ACUTE(X)	EFFECTS CHRON(Y)
Benzene	0.1	75 mm	176	0.18%	2.77	0.88	12 UEL=7.9%	42 LEL=1.3%	b,c,d,g	i,j,k,h	a,f,h,i,k, l,m,n,s	a,b,c,d, e,f
2-Butanone (Methyl Ethyl Ketone)	200	71	175	28%	2.41	0.81	16 UEL=11.4%	-123 LEL=1.4%	b,c	i,k,h	i,m,k,f,q	a,f
Carbon tetrachloride	2 ST (60min)	91	170	0.05%	5.5	1.59	NA	-9	c,e,g	h,i,j,k	b,m,r,o	a,e,g h,f,l
Chlorodiphenyl (42% Chlorine) (PCB)	.001mg/m3 (skin)	0.001	617	insol	-	1.39	?	-2	c,g	h,i,j,k	i, liver acne	c,e,g
Chlorodiphenyl (54% Chlorine) (PCB)	.001mg/m3 (skin)	<.001	687	insol	-	1.38	?	50	c,g	h,i,j,k	i, liver acne	c,e,g
Chloroform	2	160	143	5%	4.12	1.48	N/A UEL=NA	-82 LEL=NA	c,g,b	i,k,h	f,y,l,k, h,i	g,h,i,m,
o-Dichlorobenzene (1,2-Dichlorobenzene)	50	1	357	0.01%	5.07	1.3	151 UEL=9.2%	1 LEL=2.2%	c,b	i,j,k,h	i,h,liver, kidney	c,e,g,h
p-Dichlorobenzene (1,4-Dichlorobenzene)	75	0.4	345	0.008%	5.07	1.25	150 UEL=?	128 LEL=?	c,g,b	i,k,h	k,i,l,q,liver kidney,swelli	

CHEMICAL HAZARDS ASSESSMENT TABLE - CONTINUED

CHEMICAL	PEL/TLV (ppm)	VAPOR PRESSURE (mm)	BOILING POINT (deg F)	SOLUB-ILITY	VAPOR DENSITY (air=1)	SPECIFIC GRAVITY (water=1)	FLASH POINT (deg F)	MELTING POINT (deg F)	HAZARD TYPE(V)	EXPOSURE ROUTE(W)	EFFECTS ACUTE(X)	EFFECTS CHRON(Y)
1,2-Dichloroethylene	200	180-264	118-240	0.4%	3.34	1.27	36 UEL=12.8%	-57 to -155 LEL=5.6%	c,b	i,k,h	i,m,b	f,c,a
Diesel	100	<1	370	<0.1%	75	86	140 UEL=7.0%	N/A LEL=0.9%	b,c,d,g	i,j,k,h	i,k,f,p,h	a,b,h,j, leukemia
EthylBenzene	100	7.1	277	0.02%	3.66	0.87	59 UEL=6.7%	-139 LEL=1.0%	b,c,d	i,k,h	c,i,k,m,n,p	a,c,e,f
Ethylene Dichloride (1,2-Dichloroethane)	1	64	182	0.9%	-	1.24	419 UEL=16%	-8 LEL=6.2%	c,g,b	i,j,k,h	b,l,q,n,i	h,g,e,c,
Fluorotrichloromethane (Trichlorofluromethane	1000	690	75	0.1%	-	1.47	NA	-168	c	h,i,k	p,o,forstbite cardiac,inco	m,c
Gasoline	100	760	70	0.1%	5	0.74	-36 UEL=7.6%	-36 LEL=1.4%	b,c,d,g	i,j,k,h	i,k,f,p,n	a,b,h,j, leukemia
Hydrogen Sulfide	10 10 min	>760	-77	0.4%	1.19	GAS	NA UEL=44%	-122 LEL=4%	b,c	h,i,k	c,d,f,i,m IDLH	e,f
Methane	-	-	-	-	0.416	GAS	-306 UEL=?	-359 LEL=?	b,c	i	h,p asphyxiant	-
Methyl Chloride	50	>760	-12	0.5%	1.8	gas	N/A UEL=17.4%	-144 LEL=8.1%	c,g,b	i,h	f,l,q,s,d, liver,vis dis	a,g,h,c
Methlene Chloride	50	350	104	2%	2.93	1.33	? UEL=22%	-139 LEL=14%	c,g,b	i,k,h	r,u,h,l,i, numbness	e,f,m
Napthalene	10	0.08	424	0.003%	4.42	1.15	315 UEL=5.9%	122 LEL=0.9%	c	i,j,k,h	i,k,e,a,m,r,x jaundice	e,b,g,h c,a
Pentachlorophenol	0.5mg/m3 (skin)	0.0001	588	0.001%	N/A	1.98	N/A UEL=NA	374 LEL=NA	c,g	i,j,k,h	i,m,r,k,l,q,j n,x,cough	a,f,e,g, h,c,m
Tetrachloroethylene	25	58	189	0.1%	5.83	1.46	90 UEL=NA	-99 LEL=NA	c,g,b	i,k,h	k,l,q,i,o,n vis dist	f,m,g,h, a,c
Tetraethyl Lead	.075mg/m3 (skin)	0.15	228	insol	8.6	1.66	200 UEL=?	-202 LEL=1.8%	c	i,j,k	l,c,d,v	a,b,i,e,
Tetramethyl Lead	.075mg/m3 (skin)	22.5	212	insol	6.5	1.99	100 UEL=?	-15 UEL=?	c	i,j,k	l,c,i,d,v	a,b,i,e,
Toluene	100	22	231	0.05%	3.14	0.87	40 UEL=7.1%	-139 LEL=1.2%	b,c,d	i,j,k,h	e,f,h,i,k, n,r,t,u	c,f
Trichloroethylene	25	58	189	0.1%	4.54	1.46	90 UEL=10.5%	-99 LEL=8%	c,g,b	i,k,h	k,f,o,l,q,i,n vis dist	f,m,g, h,a,c
Vinyl Chloride	1	>760	339	.009%		0.89	120 UEL=33.0%	-106 LEL=3.6%	c,g	i	respiratory	a,g,f,b lymphat
Xylene (o-,m-, and p-)	100	7/9/9	285	insol	3.8/3.7/ 3.7	0.87	63/84/ 81 UEL=7.0%	-12/-54/ 56 LEL=1.0%	b,c,d	i,j,k,h	a,e,f,h,i,m, n,q,s	a,b,c,e, g,h,i

Physical Hazards

The physical hazards associated with this site include field activities, proximity to the operation of heavy equipment, and the suspension of dust and possible asbestos particles in the ambient air. Special hazards are present due to the fact that this is and old mill structure with unknown disconnected and buried water, gas, and electrical lines. Possible dangers exist from hearing impairment and communication difficulties due to heavy equipment noise, equipment movement and operation, and falling objects. An effective method of communication should be established prior to commencement of the activities. Caution should be observed as to physical placement of personnel during heavy equipment operation. All clothing should be reasonably close fitting with no loose or hanging pieces.

Heat Stress Illnesses. The potential for heat stress is a concern when field activities are performed on warm, sunny days, and is accentuated when chemical protective clothing and equipment is worn. Heat stress prevention measures will be implemented if site temperatures are above 70° Fahrenheit.

Precautions to prevent heat stress will include work/rest cycles, so that rest periods are taken before excessive fatigue occurs, and regular intake of water to replace that lost from sweating.

Heat stress due to water loss can be prevented by drinking water, at regular intervals. An adequate supply of potable water and drinking cups will be readily available.

If not prevented, heat stress results in illness. Two critical, heat stress related illnesses, heat exhaustion and heat stroke, can be life threatening, if not recognized and treated immediately.

An initial work/rest cycle of 1 hour to 10 minutes is recommended for protection of field personnel, when heat stress hazard is high. Prior to commencing work, and during each rest period, field personnel should drink at least 16 ounces of water. The recommended work/rest cycle will be adjusted based upon environmental conditions, and the judgement of the Site Safety Supervisor (SSS)/Site Safety Officer (SSO).

Heat Exhaustion. The signs and symptoms of heat exhaustion are headache, dizziness, nausea, weakness, fainting, profuse sweating, loss of appetite, dilated pupils, weak and rapid pulse, shallow and rapid breathing, possible cramps in abdomen and extremities, possible vomiting, difficulty walking, cool and sweaty skin to the touch, pale ashen gray coloring.

First aid for heat exhaustion is as follows:

- Remove victim to the decontamination area.

- Decontaminate, if practical, before entering decontamination area.

- Start cooling slowly. Be careful not to cause a chill (rest in shade and apply wet towel to forehead, and/or remove clothing as much as practical).

- Drink cool water slowly, but only if conscious and not in shock.

- If vomiting, and/or the signs and symptoms are not lessening within an hour, contact emergency help and/or transport the victim to the hospital.

Heat Stroke. The signs and symptoms of heat stroke are hot, dry skin to the touch; reddish coloring; body temperature greater than 105° Fahrenheit; no sweating; mental confusion; deep, rapid breathing that progresses to shallow, weak breathing; headache; dizziness; nausea; vomiting; weakness; dry mouth; convulsions; muscular twitching; sudden collapse; unconsciousness.

First aid for heat stroke is as follows:

- Immediately remove victim to an uncontaminated zone.

- Cool victim rapidly using whatever means are available, including: shade, opening up and/or removing clothing, soaking clothing/skin with water and fanning, placing victim in vehicle using air conditioner.

- Do not give drinking water to the victim.

- Treat for shock, if needed.

- Transport victim to the emergency room or call for emergency help.

Sunburn. Working outdoors for extended periods of time can cause sunburn to the skin. A sunburn may cause discomfort during subsequent fieldwork or during the use of Personal Protective Equipment (PPE). Excessive exposure to sunlight is associated with the development of skin cancer. Field personnel should take precautions to prevent sunburn, by using sun-screen lotion and/or wearing hats and long-sleeved garments.

3.0 MONITORING PLAN

On site air and personnel monitoring shall be conducted, as required by Federal or State health and safety regulations, or if conditions indicate. On-site air and personnel monitoring shall also be conducted at the start of each new activity, to characterize the type and degree of chemical exposure from each of the suspected major contaminants for each specific operation, and to determine site control areas.

At a minimum, monitoring will be performed in the breathing zones of the work area. Additional monitoring may occur. At this site, a Flame Ionization Detector (FID) or similar meter shall be used to monitor the air for possible toxic materials exposure to volatile organics on a daily and periodic basis. Test results will be documented. Monitoring will be conducted and documented by the SSS/SSO or SHN designate.

4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Level of Protection: A_____ B_____ C__X__ D__X__

Level C (Modified)

- Full face or half face respirator equipped with NIOSH approved organic vapor cartridges, and dust and mist filters.
- Chemically resistant boots
- Chemically resistant gloves (latex or nitrile)
- Chemical splash goggles (if a half face respirator is used)
- Hard Hat

Level D

- Chemically resistant boots
- Chemically resistant gloves (latex or nitrile)
- Chemical splash goggles
- Hard hat

At a FID organic vapor detection of 10 ppm or above, and at any detection of asbestos, respirators and other associated Level C PPE will be donned. Respirators will be removed when in areas where it is determined to be safe by the SSS/SSO or acting SHN representative. Additionally, as a general rule, respirators will be donned when any vapors are nasally detected.

Respirators will be used if indicated by site conditions to minimize volatile and ambient air organic chemical exposure by inhalation, and in the case of full face respirators to minimize exposure to the eyes. A full face respirator provides a higher level of respiratory protection, as well as preventing vapor contact with the eyes. Organic vapor/acid cartridges will be used, and new cartridges will be installed daily at a minimum, or as exposure and hours of use indicate. To prevent exposure to

particulates (dust, mists, or fumes), and to extend the usability of the organic vapor cartridges, dust and mist filters will be used if any asbestos is detected or if indicated by site conditions. Respirators, cartridges, and filters will be NIOSH approved.

Boots, protective clothing, and gloves prevent direct contact with potential contaminants in the soil, water and ambient air, and provide an easy method of personal decontamination.

Splash goggles provide protection from possible liquid splashing in the eyes, and in the case of sealed goggles, limit the contact of the ambient air with the eyes.

All employees of SHN and subcontractors will meet the minimum level of PPE when entering or working in an area of known contamination specific to the job task. If the level of contamination is unknown, the maximum level of PPE will be donned prior to entering the suspected contamination zone. Once appropriate site monitoring has been conducted to indicate the level of contamination, the level of PPE may be reduced, as appropriate. If known or suspected conditions require an increase in the level of PPE in the contamination zones or newly designated contamination zones, all operations will immediately cease until appropriate changes in PPE are made.

5.0 SITE CONTROL

Whenever feasible, personnel, equipment, and decontamination station placement shall be upwind of any suspected source of contamination. During site activities, the area will be divided into three basic areas: a contamination zone, a contamination reduction zone, and an uncontaminated zone. The uncontaminated zone will be the area(s) of the project that can be documented as not indicating any detectable levels of contamination by the selected methods of site monitoring presented in this SSP. At this project site, the contamination reduction zone and uncontaminated zone may be the same, but must be determined based on the site monitoring program.

No person shall be allowed in an area designated as a contamination zone, or a contamination reduction zone (that is not also a uncontaminated zone) unless authorized by the SSS/SSO or acting SHN representative. Persons entering areas other than uncontaminated zones must comply with the PPE provisions of this plan and currently satisfy all the requirements specified in 29 CFR 1910.120.

The SSS/SSO or acting SHN representative may and will cease operations if the site control portions of this SSP are not followed.

6.0 DECONTAMINATION PROCEDURES

Decontamination Areas

Decontamination areas will be established prior to the commencement of site operations in contamination reduction zones or uncontaminated zones. Decontamination areas may be reestablished in response to changes in environmental conditions and site activities by the SSS/SSO or SHN representative.

Equipment Decontamination

All sampling equipment will be appropriately decontaminated between each sampling event and before leaving the site. All non-disposable PPE will be appropriately decontaminated before leaving the site. Wash rinseate will be placed in a container and, subsequent to sample collection, will be properly disposed. Used, disposable PPE will be contained in a separate container and held until test results are reviewed. It is anticipated that, for this project, normal disposal will be suitable for disposable PPE. If soil test results indicate site contamination at levels designated as hazardous waste by State or Federal regulations, the disposable clothing will be tested to determine the appropriate method of disposal.

Decontamination of personnel will be accomplished by removing contaminated clothing and gear, washing exposed skin with a solution of deionized water and liquinox, and rinsing with deionized water.

Emergency Decontamination

The decision whether or not to decontaminate a victim is based on the type and severity of the illness or injury and the nature of the contaminant. For some emergency victims, immediate decontamination may be an essential part of life-saving first aid. For others, decontamination may aggravate the injury or delay life-saving treatment. If decontamination does not interfere with essential treatment, it should be performed.

- **If decontamination can be done:**

  Wash, rinse, and/or cut off protective clothing and equipment.

- If decontamination cannot be done:

  Wrap the victim in blankets, plastic, or rubber to reduce contamination of other personnel. Alert emergency and off site medical personnel to potential contamination; instruct them about specific decontamination procedures if necessary. Send along site personnel familiar with the incident.

  If immediate medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential life-saving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life, decontamination must be performed immediately. If an emergency due to a heat-related illness develops, protective clothing should be removed from the victim as soon as possible to reduce the heat stress.

7.0 GENERAL SAFETY REQUIREMENTS

The following general safety procedures shall be followed by all persons entering and/or working in the immediate area of project activities:

1. All personnel involved with these activities shall be aware of the location of buried utilities. USA Underground Alert shall be notified, if required, at least 48 hours in advance of sampling and will mark and locate any underground utilities located within or immediately adjacent to the work area.

2. No SHN or subcontractor personnel will be allowed on site without the prior knowledge and consent of the SSS/SSO.

3. There will be no field activities conducted without sufficient backup personnel. At a minimum, two persons who currently satisfy the health and safety requirements specified in 29 CFR 1910.120 (e) must be present at the site while field activities are in progress.

4. All personnel involved with the project shall bring to the attention of the SSS/SSO or resident SHN project representative any unsafe condition or practice associated with site activities.

5. Team members must avoid unnecessary contamination (such as, walking through known or suspected "hot" zones or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated equipment).

6. Respiratory devices may not be worn with beards, or under other conditions that prevent a proper seal.

7. Respiratory devices may not be worn with contact lenses.

8. No deep test pit entry (more than 5 feet in depth) will be allowed without installation of trench shoring, or other approved means of excavation security designed and installed in conformance with current Cal OSHA/OSHA regulations.

9. Smoking will only be allowed in designated areas.

10. Hard hats will be worn within 10 feet of the operation of any heavy equipment.

11. Proper hearing protection will be worn at all times in conformance with current Cal OSHA/OSHA regulations.

12. Proper eye protection will be worn to protect the eye area from liquid splashes or flying debris.

8.0 EMERGENCY RESPONSE PLAN

The SSS/SSO or SHN designate shall be immediately notified of any injury or accident occurring at this site.

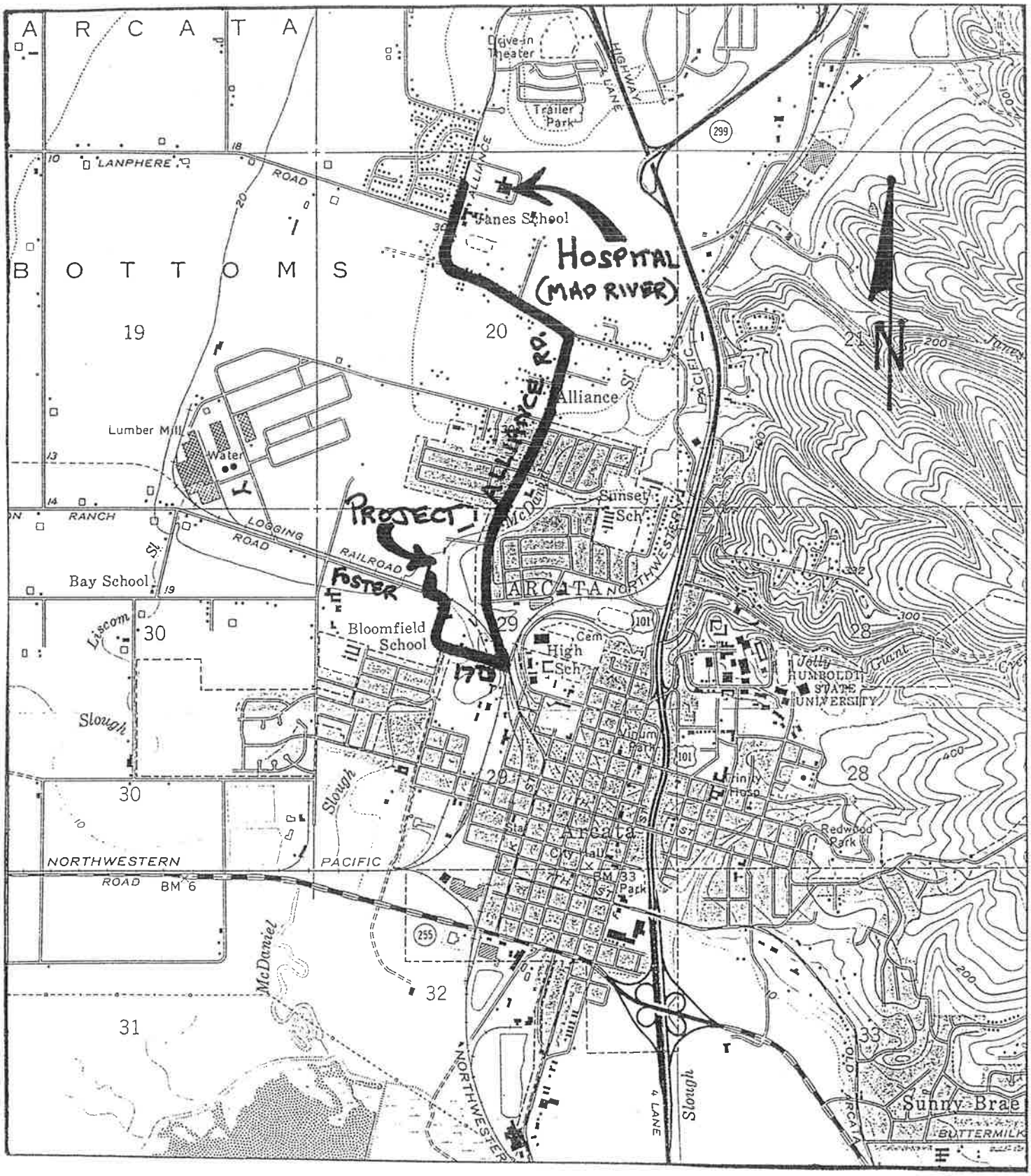
The following is a list of emergency telephone numbers if an injury requires off site medical aid.

EMERGENCY RESPONSE CONTACTS

EMERGENCY MEDICAL FACILITIES:	911
HOSPITAL	PH#
Mad River Community Hospital 3800 Janes Rd. Arcata, CA 95521	(707) 822-3621
AMBULANCE	911
FIRE DEPARTMENT	911
POLICE DEPT	911
POISON CONTROL HOTLINE	(415) 476-6600

In the event of an emergency, the following agencies and persons shall be appropriately notified immediately following the necessary emergency response contacts:

APPENDIX H



HOSPITAL LOCATION MAP

GENERAL CONTACTS

Martin Lay, SHN (Environmental Engineering Dept. Dir.)	(707) 441-8855
Dennis Scott (Eel River Sawmill)	(707) 725-6911

GOVERNMENT CONTACTS

In the event of an unauthorized release of a potentially hazardous materials, the following agencies will be notified.

California Regional Water Quality Control Board, North Coast Region	(707) 576-2220
State Office of Emergency Services	(800) 852-7550
Humboldt County Environmental Health Dept.	(707) 445-6215

9.0 DOCUMENTATION

Documentation of SHN employee medical surveillance, training, and respirator fit test records is maintained at SHN's corporate office in Eureka, California, with copies provided to each employee. SHN subcontractors are responsible to maintain their own records.

Compliance with the Site Safety Plan will be documented by execution of a sign-off sheet during the site safety briefing(s) and a daily record. By signing these sheets, persons to be involved in the project field activities acknowledge willingness to comply with this SSP throughout the period of the current field activities. Safety meetings will be scheduled at the beginning of field operations, and will be held at the start of each day. Field monitoring results will be recorded and retained on site or in the SHN files.

HAZARDOUS MATERIALS SITE OPERATIONS
SITE SAFETY MEETING ATTENDANCE
SHN CONSULTING ENGINEERS & GEOLOGISTS

JOB NAME		ACTIVITY		JOB #		
GIVEN BY:		SIGNATURE		DATE		TIME
Company/ Agency	Name	Operation/ Function	Signature	Read SSP Y/N	29CFR1910.120(e) 40hr Y/N	24hr Y/N

APPENDIX H

HAZARDOUS MATERIALS SITE OPERATIONS
DAILY RECORD
SHN CONSULTING ENGINEERS & GEOLOGISTS

JOB NAME		ACTIVITY				JOB #		
Company/ Agency	Name	Operation/ Function	Signature	Time In	Time Out	Date	29CFR1910.120(e) 40hr Y/N	24hr Y/N

APPENDIX H

WORK PLAN FOR HYDROGEOLOGIC INVESTIGATION AND REMEDIAL ACTION AT THE FORMER SPECIALTY MILL SITE 2000 FOSTER AVENUE, HUMBOLDT COUNTY AP# 505-161-11, ARCATA, CA

Prepared for:

EEL RIVER SAWMILLS, INC.

SHN Consulting Engineers & Geologists

812 W. Wabash
Eureka, CA 95501
707/441-8855

MAY 1995

APPENDIX I

Reference: 930121.100

WORK PLAN FOR HYDROGEOLOGIC INVESTIGATION AND REMEDIAL ACTION AT THE FORMER SPECIALTY MILL SITE 2000 FOSTER AVENUE, HUMBOLDT COUNTY AP#505-161-11, ARCATA, CA

Prepared for:
Eel River Sawmills, Inc.

Prepared by
SHN
CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash
Eureka, CA 95501
707/441-8855

May 1995

QA/QC:JLA

L:\930121\WORKPLAN

APPENDIX I

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INTRODUCTION

On behalf of Eel River Sawmills, Inc. (ERS), SHN Consulting Engineers & Geologists (SHN) has prepared this work plan for a hydrogeologic investigation at the former Specialty Mill site, located at 2000 Foster Avenue, Humboldt County Assessor's Parcel Number (AP#) 505-161-11, Arcata, California (See Figure 1). The proposed hydrogeologic investigation includes borehole drilling and soil sampling, groundwater monitoring well installation and initial groundwater sampling, and groundwater elevation monitoring. The proposed subsurface investigation to further assess the source, degree, and extent of on site soil and groundwater contamination detected at the site during previous subsurface investigations (February and May 1994), is required by the Humboldt County Environmental Health Department (HCEHD) in the HCEHD's March 8, 1995, letter to ERS (Appendix A), and was discussed during the March 8, 1995, meeting between Mr. Dennis Scott of ERS, Mr. Dale Dell'Osso of HCEHD, and Mr. Marty Lay of SHN. The HCEHD has also required that duplicate copies of all information gathered at the site be submitted to the California Regional Water Quality Control Board, North Coast Region (RWQCB).

BACKGROUND

Site Location

The approximately 17 acre project site is located northwest of the City of Arcata, California, in the northwest 1/4 of Section 29, Township 6 north, Range 1 east, Humboldt Base and Meridian. The site is located at 2000 Foster Avenue, adjacent to the Arcata City limits, in an unincorporated area of Humboldt County. It is legally delineated as Humboldt County Assessor's parcel number 505-161-11 (See Figure 1). The project site is situated at an elevation of approximately 20 to 25 feet above mean sea level, in the relatively flat alluvial plain of the Mad River referred to as the Arcata Bottoms. The Arcata Bottoms area gently slopes down in a westward direction.

Surface waters closest to the project sites are McDaniel Slough (Janes Creek) located on the eastern boundary of the project site and Liscom Slough located approximately 0.75 of mile west of the project site (Figure 1). Local surface drainage for the project site is to the southwest, and the site is relatively flat with a general slope of less than 1 percent. An earthen ditch on the north side of the railroad tracks conveys drainage to the east, where it is received into the waters of McDaniel Slough/Janes Creek (Figure 2).

Site History

Historical use of the property, until 1950, was open space, undeveloped land, and reportedly pasture at times. A old growth redwood lumber mill was constructed on the site in 1951, and the mill, through various owners and changes in milling operations, continued operation until 1986 (most recently as Specialty Mill). The mill structures were then dismantled and the equipment was liquidated. Remnants of the mill operations existing on site at present include concrete slab foundations for the sawmill, log debarker, and mill loading ramps. Additionally, the northern half of the site is characteristic of long used log deck area with rocked loading corridors and wood debris laden deck areas. No site development has been conducted since the mill dismantling operations.

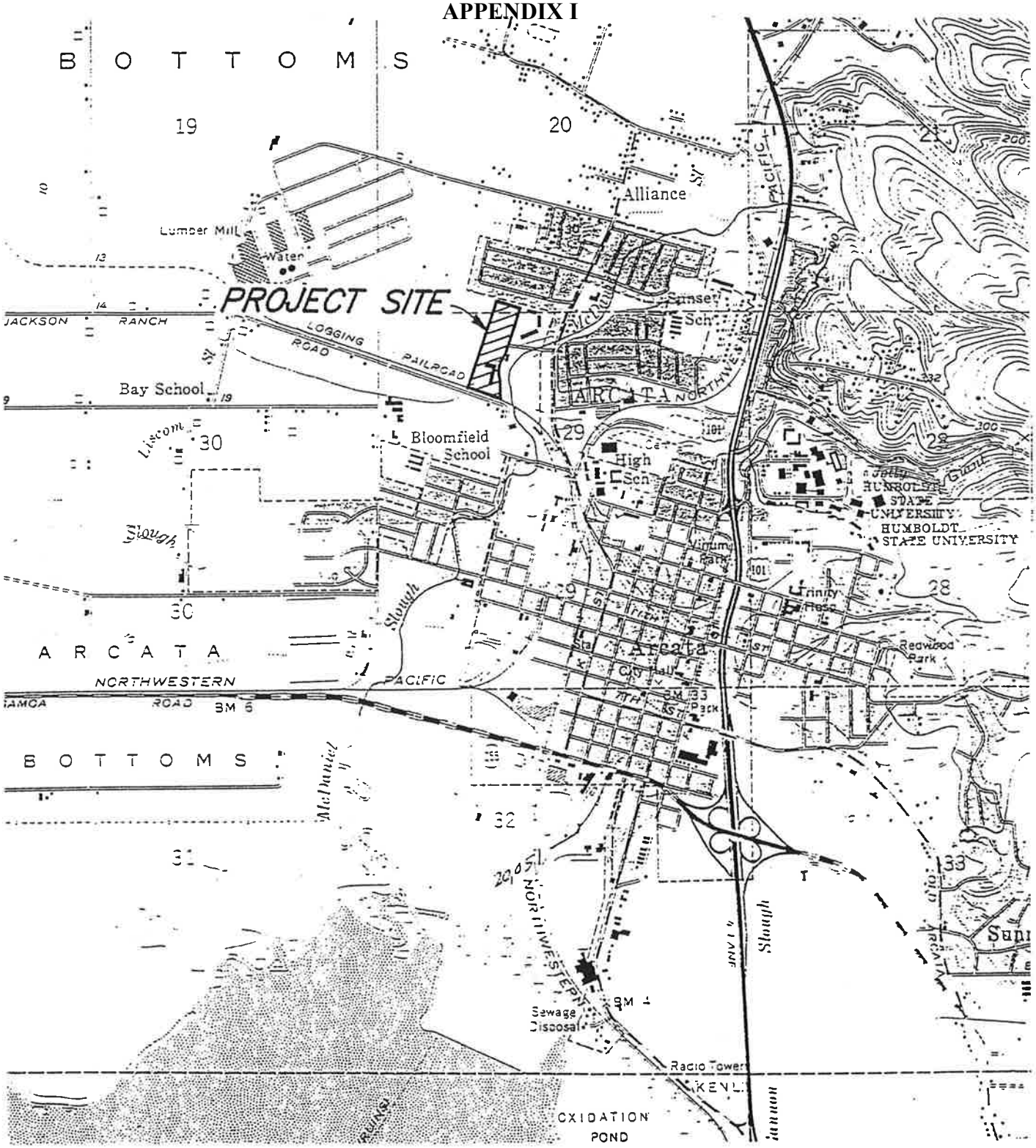
Previous Investigations

Phase I Environmental Site Assessment. Formerly operated by several owners, as a lumber producing sawmill, the abandoned, non operational site is being considered for liquidation by its current owner, ERS. SHN conducted a Phase I Environmental Site Assessment (ESA), for the property in June 1993. Information gathered during the ESA indicated that no wood preservatives of any kind were used at the site, and sources of potentially adverse soil and/or groundwater contamination (if any), were a result of the handling of petrochemical products used during mill operations. Petrochemical substances associated with the mill operations include diesel and gasoline fuels, and greases, motor oils, hydraulic fluids, and solvents for equipment operation, maintenance, and repair. Heavy metals associated with used motor oils, gasoline fuels, and solvent used in cleaning mechanical equipment include cadmium (Cd), chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn).

Phase II Site Investigation (February and May 1994). Pursuant to recommendations in the ESA, ERS authorized SHN to proceed with limited, initial Phase II subsurface soils and groundwater field investigation, to determine the relative extent and types of contamination, if any. Phase II investigation field work was conducted by SHN in February and May of 1994.

Based on the Phase II investigation findings, historic lumber milling operations at the site have, at specific locations, impacted the site soils and potentially the upper groundwater. Analytical results from February and May 1994 field investigations (soil and groundwater samplings), have indicated minor to moderate petrochemical contamination of the soil and groundwater. No wood preservatives of any type were reported or indicated to have been used at the site, and no volatile organic compounds have been detected in soil or groundwater samples.

APPENDIX I



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA

VICINITY MAP

SHN 930121.100
MAY, 1995
FIGURE 1

Specific areas of documented soil contamination include the historic fuel tank area (FTA), the vehicle maintenance area (VM), the debarker area (DB), isolated areas of the old log deck (DA), the mill leachfield area (LF), and isolated general site areas. The FTA, DB, and VM areas indicate soil contamination (petrochemical) sufficient to warrant remedial action. Groundwater characterization initially indicates potential petrochemical contamination associated with those specific areas.

Groundwater Elevations and Flow Direction (May 1994). Based on the stabilized groundwater elevations measured in temporary piezometers BH-1, BH-2, BH-3, and BH-4, the groundwater flow direction on May 18, 1994, was toward the east-southeast (toward McDaniel Slough), at a gradient of approximately 0.0103.

Cumulative Analytical Results. A summary of project-to-date analytical results of soil and groundwater sampling conducted by SHN is presented in Table 1 (follows Page 4). State certified North Coast Laboratories, Ltd., in Arcata, California, conducted the analytical testing for all groundwater and soil samples collected by SHN. Three areas of concern, relative to potential soil and/or groundwater contamination with petroleum hydrocarbon substances, have been documented. Historic mill operations associated with the fuel tank area (FTA), the vehicle maintenance area (VM), and the log debarking (DB) facility are documented as suspected areas of soil and/or groundwater contamination.

WORK PLAN FOR HYDROGEOLOGIC INVESTIGATION

Drilling and Well Installation

To further assess the source, degree, and extent of contamination in the soil and/or groundwater resulting from a potential release from specific areas of concern at the site, SHN proposes to drill four boreholes, install groundwater monitoring wells in the four boreholes, collect soil and groundwater samples, and measure groundwater elevations in the monitoring wells. Proposed borehole/monitoring well locations and designations are described below and shown on Figure 2.

MW-1. Background monitoring well located along the eastern property boundary, upgradient of the former active areas of the mill and the areas of concern. This location was proposed as a representative, upgradient, on site position for monitoring background water quality.

MW-2. Downgradient of the former Fuel Tank Area (FTA), to determine if contamination from the FTA has contributed to soil/and or groundwater contamination at the site.

MW-3. Downgradient of the former Debarker Area (DB), to determine if former activity in the DB area has contributed to soil/and or groundwater contamination at the site.

MW-4. Downgradient of the former Vehicle Maintenance Area (VM), to determine if former activity at the VM area has contributed to soil/and or groundwater contamination at the site.

Boreholes. Boreholes will be drilled using a conventional truck mounted drill rig, equipped with 8-inch diameter augers. Based on conditions encountered during previous subsurface investigations, boreholes will be up to approximately 8 feet in depth for soil sampling purposes, and up to approximately 12 feet in depth for groundwater monitoring well installation. The total depth of the boreholes will depend on the actual depth to groundwater (anticipated to be encountered between 4 and 8 feet below ground surface). Soil samples will be collected at approximately five foot intervals, areas of obvious contamination, pronounced changes in soil type, and the unsaturated soil just above the groundwater surface. Based on the anticipated shallow depth to groundwater, it is estimated that 1 to 2 soil samples will be collected from each borehole.

Soil encountered in the boreholes will be logged in accordance with the Unified Soil Classification System (USCS).

Monitoring Wells. The four boreholes will be converted to monitoring wells.

Installation. The monitoring wells will be cased with flush-threaded, 2 inch inside diameter, Schedule 40, polyvinyl chloride (PVC) risers and 0.010 inch machine slotted screens. Number 2/16 (or equivalent texture) sand will be used for the filter pack. Based on the conditions encountered during previous subsurface investigations, the selected screen size and filter pack size are compatible with the aquifer soil texture. A bentonite pellet seal will be placed on top of the filter pack, and charged with distilled water. The remaining annulus will be backfilled with Type I-II Portland cement with 5% bentonite grout (to prevent shrinkage away from the casing) from the top of the bentonite seal to the ground surface. A minimum 4 inch thick, concrete mix surface seal, will be placed around the well, and sloped away from the well to promote drainage. Each well will be completed above grade with a lockable, steel well monument. Typical monitoring well construction is shown on Figure 3.

Screen interval depth, and depth to the bentonite seal will depend on the depth to anticipated groundwater, seasonal variations, and conditions encountered in the field.

Development. No sooner than 48 hours after the placement of grout seals, the monitoring wells will be developed by surge and purge techniques. A "Well Wizard" air displacement purge pump will most likely be used to develop wells, until reasonably clear water is discharged.

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl-benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-FTA1	2.0	02/17/94	500 (a)	--	19 (e)	--	<0.03	<0.03	<0.03	<0.03	--	--	--	--	--	12
TP-FTA1	5.0	02/17/94	250 (a)	--	220 (e)	--	<0.5 (g)	<0.5 (g)	<0.5 (g)	<0.5 (g)	--	--	--	--	--	8.0
TP-ST	2.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	82	98	61	8.4
TP-ST	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	99 (i)	110	62	9.1
TP-VM4	2.0	02/17/94	--	140 (h)	--	82	--	--	--	--	--	<1.0	25	29	38	20
TP-VM4	4.0	02/17/94	--	<10	--	50	--	--	--	--	--	<1.0	76	88	74	9.7
TP-DBW	2.0	02/17/94	--	130 (h)	--	82	--	--	--	--	--	<1.0	25	28	30	4.8
TP-DBW	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	80	87	58	6.4
TP-DBE	2.0	02/17/94	--	--	--	58	--	--	--	--	--	<1.0	22	45	270	51
TP-DA1	2.0	02/17/94	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
TP-DA2	2.0	02/17/94	--	--	--	95	--	--	--	--	--	--	--	--	--	--
TP-1	1.5	05/17/94	19 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	50 (f)
TP-1 (DUPE)	1.5	05/17/94	--	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	29 (f)
TP-1	4.0	05/17/94	16 (a)	--	3.6 (e)	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	7.6
TP-2	1.0	05/17/94	1.9 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	14
TP-2	4.0	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.0
TP-3	1.0	05/17/94	160 (d)	--	19	--	<0.005	<0.005	<0.10 (g)	<0.10 (g)	--	--	--	--	--	5.3
TP-3	3.2	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	10
TP-3	4.5	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.1
TP-4	2.0	05/17/94	8.5 (d)	200	--	--	--	--	--	--	--	--	--	--	--	--
TP-4	4.5	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	1.3	05/17/94	41 (d)	510	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	4.4	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

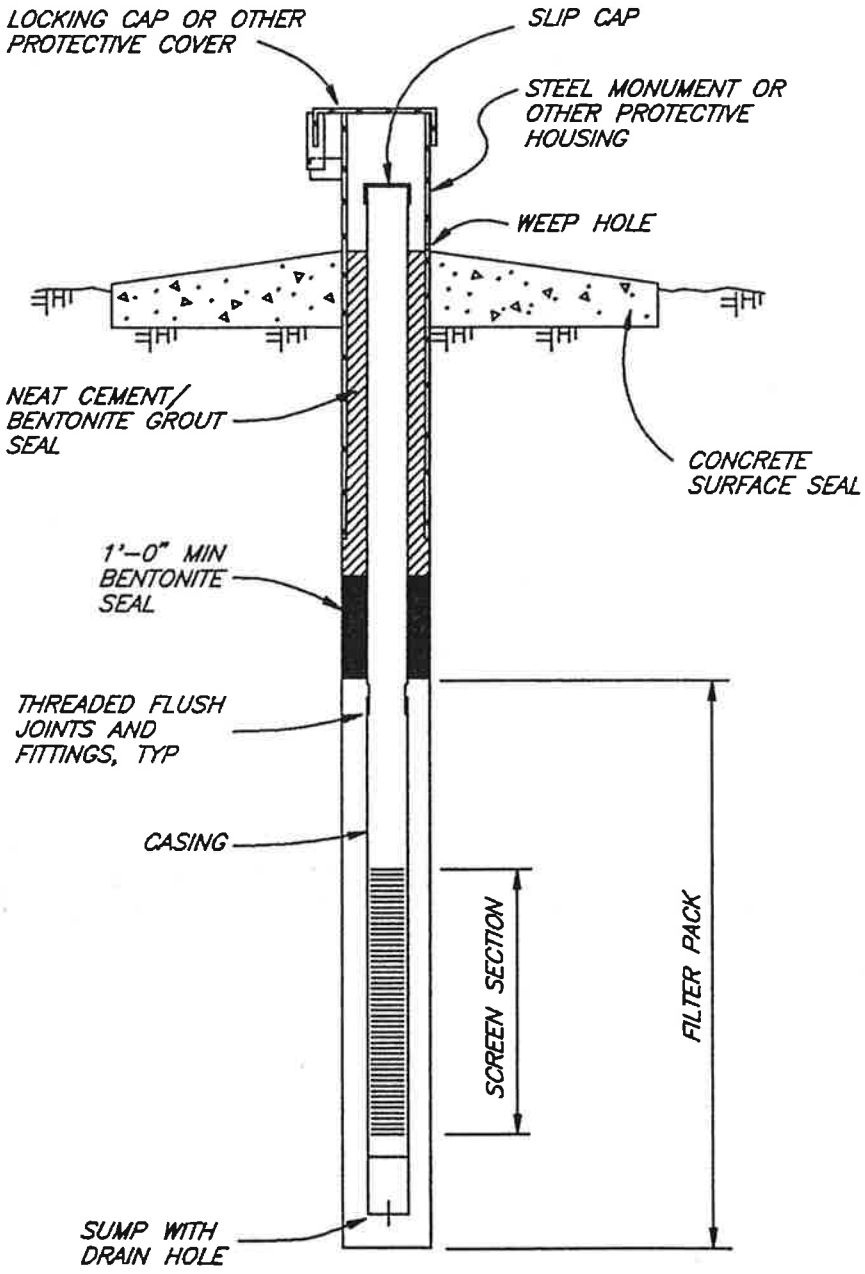
APPENDIX I

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-6	1.7	05/17/94	24 (d)	150	--	--	--	--	--	--	--	--	--	--	--	--
TP-6 (DUPE)	1.7	05/17/94	5.6	48	--	--	--	--	--	--	--	--	--	--	--	--
TP-6	4.3	05/17/94	49 (d)	820	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	1.2	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	4.9	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	2.7	05/17/94	280 (d)	3400	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	4.5	05/17/94	270 (d)	1700	<1.0	--	<0.050	<0.050	<0.050	<0.025	<0.050	--	--	--	--	--
TP-9	1.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	10
TP-9	4.8	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	6.4
TP-10	1.1	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-10	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	4.3	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	2.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	4.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	1.4	05/18/94	<5.0	210	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	1.7	05/18/94	17 (d)	160	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	4.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX I

APPENDIX I



SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA

TYPICAL ABOVE GRADE MONITORING WELL

SHN 930121.100
MAY, 1995

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-17	1.1	05/18/94	3.0 (d)	35	--	--	--	--	--	--	--	--	--	--	--	--
TP-17 (DUPE)	1.1	05/18/94	3.2 (d)	28	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	3.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
Groundwater Samples			**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**
BH-1		05/18/94	67 (b)	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.043
BH-2		05/18/94	<50	<500	--	--	--	--	--	--	--	<0.010	0.047	0.077	0.031	<0.020
BH-3		05/18/94	480 (c)	1800	<50	--	<1.0	<1.0	<1.0	<0.50	<1.0	<0.010	0.023	0.034	<0.020	<0.020
BH-4		05/18/94	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--

-- = Not tested

TPHIR = Total Petroleum Hydrocarbons, analyzed using Infrared spectrophotometry

** EPA 8010/8020 was the method used for the soil samples, EPA 601/602 was the method used for the water samples.*

DUPE = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesl. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In the labs judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The result reported represents the amount of material in the gasoline range only.

(f) Due to the high level of lead present, this sample and its duplicate sample were analyzed by EPA 6010. The difference in the lead results may be due to sample non-homogeneity.

(g) The detection limits were raised due to matrix interference.

(h) Sample contains large individual peaks in the motor oil range, in addition to the motor oil present. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

(i) The sample from TP-ST at 5.0' was also tested for Soluble Chromium, the result was 0.56 mg/L. The Soluble Threshold Limit Concentration (STLC) for Chromium = 5.0 mg/L.

APPENDIX I

Groundwater Elevation Monitoring. During the hydrogeologic investigation described in this work plan, stabilized groundwater elevations in the monitoring wells will be measured after well development and just before the proposed submittal of the draft hydrogeologic investigation report. The long term frequency and duration of groundwater elevation monitoring will be presented in the recommendations of the hydrogeologic investigation report.

Soil and Groundwater Sampling and Analyses

Borehole Soil Sampling. Samples will be collected from continuous dry core barrel samples collected during auger advancement. Samples will be collected in 1 inch diameter by 3 inch long brass tubes provided by the laboratory. The ends of the soil sample tubes will be covered with Teflon® tape and plastic caps (provided by the laboratory) to provide an airtight seal.

Initial Groundwater Sampling. One initial round of groundwater sampling and testing will be performed on the newly installed monitoring wells. Prior to sampling each new monitoring well, a decontaminated air displacement pump, Teflon® bailer, or disposable bailer will be used to evacuate approximately three well volumes of water. If yield is low, samples will be collected after removing one well volume and allowing the water level to stabilize. A well volume is defined as the water in the well casing plus the water in the filter pack (assumed sand porosity of 35 percent). The pH and electrical conductivity will be measured periodically during the evacuation of water until readings have stabilized within 10 percent. (Measurements are considered to have stabilized when three or more consecutive measurements taken 5 minutes apart vary by less than 10 percent.) Samples will be collected by discharging water from a disposable bailer directly into appropriate, laboratory supplied containers.

Sample Handling and Analytical Methods. Each soil and groundwater sample will be labeled on site to show sample number, location, job number, date and time, and the sampling personnel. Samples will be stored on ice in closed chests from the time of collection until delivery to the laboratory. Each sample will be transported, under chain-of-custody, to California Department of Health Services certified North Coast Laboratories, Ltd. within 24 hours of collection.

Soil samples and initial groundwater samples will be collected from boreholes/wells MW-1, MW-2, MW-3, and MW-4. The sampling program for soil and initial groundwater sample is presented in Table 2, on the following page.

TABLE 2
SAMPLING PROGRAM FOR SOIL AND INITIAL GROUNDWATER SAMPLES

Constituent	MW-1		MW-2		MW-3		MW-4	
	Soil[a]	GW[b]	Soil[a]	GW[b]	Soil[a]	GW[b]	Soil[a]	GW[b]
TPHG[c]	X	X	X	X	X	X		
TPHD[d]	X	X	X	X	X	X	X	X
TPHMO[e]					X	X	X	X
BTEX[f]	X	X	X	X	X	X		
Cadmium	X	X			X	X	X	X
Chromium	X	X			X	X	X	X
Lead	X	X	X	X	X	X	X	X
Nickel	X	X			X	X	X	X
Zinc	X	X			X	X	X	X
Tannins & Lignins		X		X		X		X

a Quantity of soil samples collected from the borehole will be dependent upon conditions encountered in the field.
b Groundwater
c Total Petroleum Hydrocarbons as gasoline (TPHG)
d TPH as diesel (TPHD)
e TPH as motor oil (TPHMO)
f Purgeable aromatics (includes benzene, toluene, ethylbenzene, and xylenes [BTEX]) by EPA Method 8020

Quality Control and Quality Assurance Measures. During sampling, a "blind," duplicate, groundwater sample will be collected to check the reproducibility of the laboratory results. Field quality control procedures will include the analysis of a trip blank to ascertain that no contamination is introduced to the samples from the field.

Samples submitted for laboratory analyses will be accompanied by chain-of-custody documentation. Samples will be stored on ice, in closed chests, from the time of collection until delivery to the laboratory, where they will be inspected for temperature and container condition, before analysis.

Decontamination Procedures. To prevent cross contamination between samples, all down hole drilling and sampling equipment will be steam cleaned before and between each borehole location. Sampling tools will be washed with distilled water and laboratory grade detergent, and rinsed with distilled water. Sample handling will take place on a clean, dry surface. Disposable gloves will be worn, and changed between handling of each sample. Rinseate from decontamination will be stored in 55 gallon drums, labeled, and secured as described in the "Containerization of Soil Cuttings and Purge Water" section, below.

Containerization of Purge Water and Stockpiling of Soil Cuttings

Soil cuttings from the boreholes will be stockpiled on and covered with sheet plastic adjacent to the borehole location. Purge water from well development and groundwater sampling and rinseate from decontamination will be contained in 55 gallon steel drums, and stored in a secure location on the project site. Each drum will be labelled appropriately, identifying the drum as containing potentially hazardous materials. These labels describe the type of material stored (water), the source of the material, and people to contact for information. Stockpiled soil and containerized water will be stored at the site pending the results of laboratory analyses. When the results of the laboratory analyses are received, decisions can be made regarding the proper disposal of the soil and water.

Well Elevations

The newly installed wells will be surveyed for top of PVC casing and ground surface elevations, and referenced to a permanent benchmark. Elevations will be surveyed to the nearest 0.01 foot by a California licensed surveyor. Well casings will be notched, and subsequent water level readings will be measured to the top of the PVC casing.

Report of Findings

A report of findings will be prepared to document the results of the hydrogeologic investigation, and to present conclusions and recommendations for additional investigation, if warranted.

Site Safety Plan

An updated Site Safety Plan (SSP) for the site is provided as Appendix B. The SSP details the health and safety procedures to be followed during the subsurface investigation work associated with drilling, monitoring well installation, and soil and groundwater sampling fieldwork. Site safety briefings will be conducted daily during the sampling fieldwork, and will involve SHN staff, subcontractors, and any other on-site personnel.

WORK PLAN FOR REMEDIAL ACTION

General Objective

Selection of alternatives for remedial action, relative to documented soil contamination and as yet unconfirmed groundwater contamination, is being driven by the ultimate goal of residential development occupying the major portion of the subject property. Cleanup levels for contaminated soils, and groundwater contamination, if any, will need to be assessed and established between the County and ERS so that the potential for residential site development is allowed to proceed in a timely and publicly safe manner.

This remedial action plan will set forth the methods by which ERS and SHN believe the above objective can be accomplished within economic and political constraints as yet not fully defined. Key tasks in conducting the remedial action include:

- establishment of realistic cleanup levels for soil
- field verification and documentation that the established soil cleanup levels have been reached
- identification of cost effective soil remedial action alternatives
- implementation of the soil remediation/disposal program

Groundwater remediation, if indicated, will be further addressed subsequent to installation and sampling of the groundwater monitoring wells.

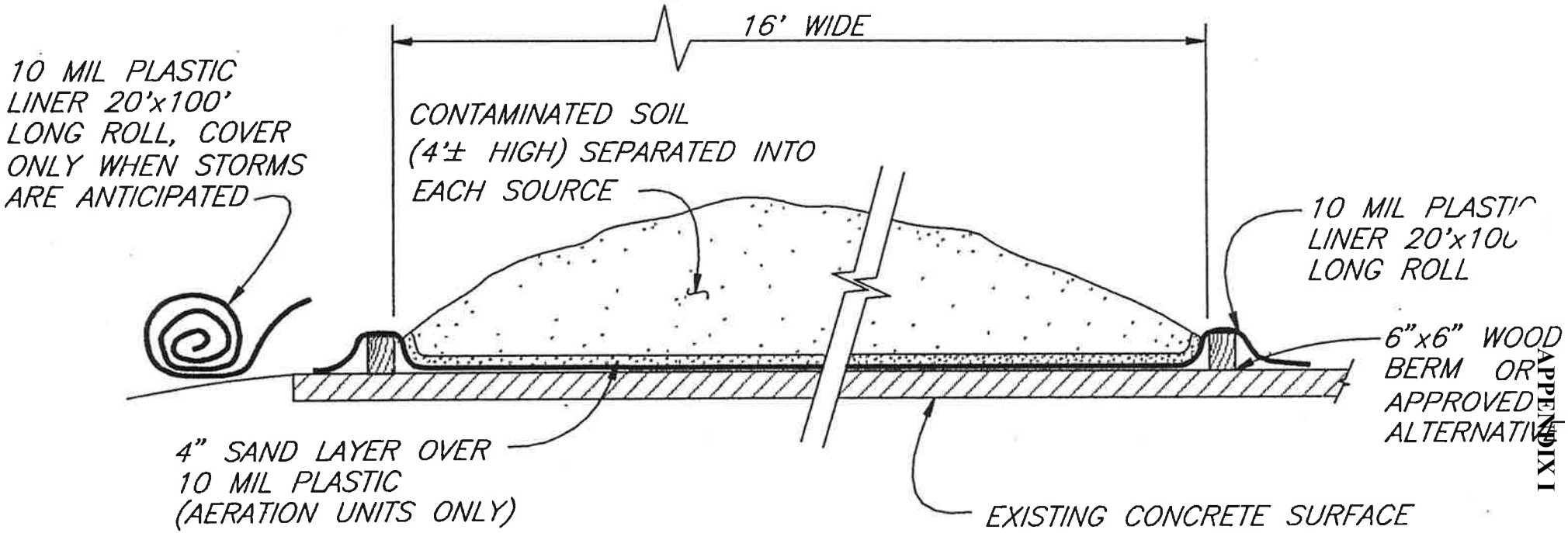
The site safety plan for the hydrogeologic investigation will be modified, if necessary, and used for the remedial action excavation and sampling program.

Soil Remedial Action

Petroleum hydrocarbon contamination of soils is the contaminant of concern for remediation at this site. Petroleum hydrocarbons of concern have been identified as gasoline, diesel, and motor oil. No volatile or semi-volatile organic substances have been indicated. Areas around the historic fuel tank area (FTA-sample TP-1) and the east debarker area (DB-sample TP-DWE) indicate elevated lead (Pb) levels that will be further assessed.

SHN proposes to direct the excavation of isolated areas (Figure 2) of soil contamination to reach the levels of contamination established for allowable site closure, and within the constraints of site physical parameters. Excavated contaminated soil will be stockpiled on site, in sections corresponding to the source of removal. Stockpiled soil will be placed on 10 mil plastic laid upon the existing concrete mill foundation slab, covered with 10 mil plastic (if necessary), and bermed to prevent stormwater from contacting the contaminated soils (see Figure 4).

Excavation areas will be field screened using a portable organic vapor analyzer (OVA), to assist in determining the extent of final excavation limits to meet the cleanup criteria. Verification soil sampling within the excavation(s) will be conducted by collecting one soil sample for every 200 square feet of bottom area, and one sample for every 20 linear feet of sidewall up to 5 feet in depth. For sidewalls greater than 5 feet in depth, one soil sample will be taken at two depths for every 20 linear feet of trench. Table 3 indicates the proposed excavation verification soil sampling program for the areas shown on Figure 2. Soil samples will be collected and handled as previously described in the section "WORK PLAN FOR HYDROGEOLOGIC INVESTIGATION."



APPENDIX I

NO SCALE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA

SOIL STOCKPILE/ AERATION UNIT

SHN 930121.100
MAY, 1995
FIGURE 4

TABLE 3
SAMPLING PROGRAM FOR EXCAVATION VERIFICATION SOIL SAMPLING

Constituent	FTA	VM	DB
TPHG[a]	X		
TPHD[b]	X	X	X
TPHMD[c]	X	X	X
BTEX[d]	X		X
LEAD	X	X	X

a Total Petroleum Hydrocarbons as gasoline (TPHG)
b TPH as diesel (TPHD)
c TPH as motor oil (TPHMO)
d Purgeable aromatics (includes benzene, toluene, ethylbenzene, and xylenes [BTEX]) by EPA Method 8020. Modified method for FTA.

Stockpiled soils will be sampled and analyzed to assist SHN and ERS in selecting an appropriate remediation or disposal method. Sampling methodology and analyses will be selected to accommodate the anticipated preferred remediation/disposal methods. Specific protocol will be addressed in writing to the County prior to SHN conducting the sampling.

Soil Remediation/Disposal Alternatives

Remedial action alternatives tentatively being considered by SHN for the excavated soil, based upon preliminary findings to date, include:

- on site aeration/bioremediation
- on site/off site thermal desorbtion
- on site/off site hot air vapor extraction
- disposal to an appropriate recycling landfill

The specifics of these various alternatives, and the intended application will be detailed in future program delineation as indicated by additional site soils characterization.

SCHEDULE

Table 4 presents the tentative schedule for completion of the hydrogeologic investigation and remedial action activities. The tentative schedule depends on the approval of the work plan and well/borehole permits by the County by the proposed dates, and drill rig availability, and may need to be adjusted.

Underground Service Alert will be notified at least 48 hours prior to commencing any subsurface exploration work at the site.

TABLE 4
SCHEDULE

Task	Proposed Dates for Completion of Tasks
Submit work plan to the County and the RWQCB	by May 19, 1995
Receive County/RWQCB written comments on work plan	by May 31, 1995
HYDROGEOLOGIC INVESTIGATION	
Submit well permit application to County	by May 26, 1995
Receive approved well permit from County	by May 31, 1995
Respond to County/RWQCB comments, if required	by June 6, 1995
Notify Underground Service Alert of intent to drill	by June 6, 1995
Drill boreholes and install monitoring wells. Submit soil samples to laboratory.	by June 16, 1995
Develop and initially[a] sample groundwater monitoring wells. Submit groundwater samples to laboratory.	by June 23, 1995
Measure groundwater elevations[a]	Monthly by June 23 and July 24, 1995[a]
Survey well elevations	by June 28, 1995
Receive analytical results from the laboratory	by July 10, 1995
Submit draft hydrogeologic investigation report to ERS for review and comment	by July 24, 1995
Submit final hydrogeologic investigation report to the County and the RWQCB	by August 1, 1995
REMEDIAL ACTION	
Soil excavation at documented contamination areas, verification sampling	by July 20, 1995
Receive soil verification analytical results from laboratory	by August 4, 1995
Further remedial action scheduling after data review and discussion	Not scheduled at this time

a Long term frequency and duration of groundwater sampling and elevation monitoring has not yet been determined. Recommendations for continued groundwater monitoring and sampling will be presented in the hydrogeologic investigation report.

APPENDIX I

REFERENCES

SHN Consulting Engineers & Geologists. (June 1993). Phase I Environmental Site Assessment, 2000 Foster Avenue, Arcata, California, AP #505-161-11. Eureka: SHN.

---. (April 18, 1994). Status Report for Initial Soils Investigation Conducted on February 17, 1994, at 2000 Foster Avenue, Arcata, California (AP #505-161-11). Eureka: SHN.

---. (January 1995). Initial Report of Findings for 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11, Formerly Specialty Mill. Eureka: SHN.

APPENDIX A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF HEALTH AND SOCIAL SERVICES
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET - SUITE 100 EUREKA, CALIFORNIA 95501 (707) 445-6215

March 8, 1995

CERTIFIED MAIL
Z 351 955 858

Eel River Sawmills, Inc.
Attn: Dennis Scott
1053 Northwestern Avenue
Fortuna CA 95540

Subject: Soil / Groundwater Contamination, Eel River Sawmills, Inc. Specialty Mill
2000 Foster Avenue, Arcata, CA LOP Case #12518

Dear Mr. Scott:

Laboratory analysis indicates the presence of petroleum contaminated soil or groundwater at, or adjacent to, the above referenced underground storage tank facility. This contamination may be a result of a spill or leakage from one or more underground storage tanks at the facility. Accordingly, an unauthorized release report is required to be filed with this department within five (5) working days of discovery (California Code of Regulations, section 2652).

Please complete and sign the enclosed *Underground Storage Tank Unauthorized Release (Leak)/ Contamination Site Report* as completely as possible and return all but the last copy to this department.

The subject underground storage tank facility is of a category which is under the jurisdiction of the Local Underground Storage Tank Cleanup Oversight Program administered by the Humboldt County Health Department under contract with the State Water Resources Control Board.

The possible levels of contamination present in the soil indicates that further assessment will be needed to determine the threat and/or impact to groundwater. Enclosed for your information and use is a copy of the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tanks* (Tri-Regional Recommendations). This document describes the necessary work to investigate releases from underground tanks.

Specifically, you will need to submit, as soon as possible, all current information on the underground tank

removal/sampling. You will also need to review the initial soil or water sample results to determine if:

a. Water in the excavation has any level of contamination;

OR

b. Soil samples were contaminated with levels of petroleum hydrocarbons in excess of 100 parts per million (ppm).

If either of these conditions were present, then a hydrogeologic assessment will be needed to determine the threat and/or impact to groundwater. A workplan prepared by a California registered engineer or geologist will be needed.

However, if there were no detectable constituents in water and the initial soil samples were less than 100 ppm, then please review Table 3 and page 9 of the enclosed *Tri-Regional Recommendations* to determine whether a Case Number 2 evaluation is possible for your site. If so, please submit all the available information described in Table 3.

The required workplan or information will need to be submitted pursuant to Section 13267 of the California Water Code and be received by our office by **May 8, 1995.** Duplicate copies of all information must be submitted to the North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

My staff and I look forward to working with you in this matter. Do not hesitate to contact Dale Dell'Osso at (707) 441-5690 if you have any questions.

Sincerely,

James W. Clark REHS

James W. Clark, R.E.H.S.
Administrative Representative

JWC:nh

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board

APPENDIX B

SITE SAFETY PLAN

Reference: 930121.100

SITE SAFETY PLAN

HYDROGEOLOGIC INVESTIGATION AT THE FORMER SPECIALTY MILL SITE 2000 FOSTER AVENUE, HUMBOLDT COUNTY AP#505-161-11, ARCATA, CA

GENERAL INFORMATION

Project: Former Specialty Mill

Site Address: 2000 Foster Ave., Arcata

Site Telephone: SHN mobile telephone 707/498-1010

Proposed Dates of Investigation: To be determined

Plan Prepared by: Amy Kornberg

Date: April 4, 1995

KEY PERSONNEL AND RESPONSIBILITIES

	NAME	TELEPHONE NO.
Project Manager:	Marty Lay	707/441-8855
Site Safety Supervisor:	Marty Lay	707/441-8855
Project Geologist:	Johanna Ambler	707/441-8855
Site Safety Officer:	Marty Lay	
Field Personnel:	Marty Lay Johanna Ambler David Paine Curtis Coburn	
Drilling Subcontractor:	All Terrain Exploration Drilling	916/991-2999
Other Subcontractors:	To be determined	

1.0 INTRODUCTION

This Site Safety Plan (SSP) establishes general safety requirements for limiting personal exposure to potentially hazardous materials. The intent of this SSP is to provide health and safety guidelines for the personal protection of SHN staff, and contractor or subcontractor employees related to hazardous materials operations at the site. The application of this SSP is limited to subsurface investigation activities associated with borehole drilling and soil sampling, monitoring well installation, and groundwater sampling. The soils to be investigated are known to contain gasoline, (TPHG) diesel (TPHD), and motor oil (TPHMO), and suspected to contain aromatic hydrocarbons; Benzene, Toluene, Ethylbenzene, and Xylene (EPA 8020 MOD), resulting from the former industrial use of this site. This SSP shall be implemented immediately upon detection or suspected presence of any contaminants. All site personnel and visitors must read this SSP prior to entering the contamination reduction zone or contamination zone. General OSHA requirements involving the operation of heavy equipment, and working in/or near excavations and trenches will be followed at all times. It is not a focus of this SSP to provide safety guidelines for general construction activities, excavation activities, or heavy equipment operations.

2.0 HAZARD ANALYSIS

Site Hazard Overview

Apparent Hazard	Type of Facility	Status of Facility
Serious _____	Impoundment ___	Active _____
Moderate __X__	Landfill _____	Inactive __X__
Low _____	Open ____X__	Unknown _____
None _____	Other Old Mill Structure	

Waste Type(s)	Waste Characteristics	Type/Form of Hazard
Gas _____	Toxic ____X__	Dust _____X__
Liquid __X__	Corrosive ____	Liquid _____X__
Sludge ____	Ignitable__X__	Fumes _____X__
Solid __X__	Volatile __X__	Vapors _____X__
Unknown ___	Radioactive ___	Contact _____X__
Other _____	Reactive _____	Respiratory __X__
	Unknown _____	Particulates __X__
	Other _____	IDLH _____

Chemical Hazards

The chemical hazards at this site include exposure to gasoline, diesel, and motor oil. Due to the unknown nature of petrochemical hydrocarbons, the chemical hazard at this

site may also include exposure to; the petrochemically associated aromatic hydrocarbons of benzene, toluene, ethylbenzene, and xylenes. A chemical hazard identification and assessment table summarizing published physical and toxicological exposure guideline data for the constituents that have been identified or suspected to be potentially present at the site, has been prepared and is contained in this SSP. The published material referenced for this data represents industry standards and includes the most recent information from the National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values and Biological Exposure Indices.

Exposure to these chemical hazards can take place in the form of direct contact with the contaminated soils or water, and ambient air; or inhalation of ambient air in the vicinity of demolition and grading activities or remediation activities such as excavation, boring or soil tilling. The ambient air may contain dispersed chemicals as vapors, fumes or mists, and soil dusts to which the chemicals adhere.

Have all contaminants that may be present on site been identified?
Yes __ No __ Unknown X

Physical Hazards

The physical hazards associated with this site include field activities, proximity to the operation of heavy equipment, and the suspension of dust and possible asbestos particles in the ambient air. Special hazards are present due to the fact that this is and old mill structure with unknown disconnected and buried water, gas, and electrical lines. Possible dangers exist from hearing impairment and communication difficulties due to heavy equipment noise, equipment movement and operation, and falling objects. An effective method of communication should be established prior to commencement of the activities. Caution should be observed as to physical placement of personnel during heavy equipment operation. All clothing should be reasonably close fitting with no loose or hanging pieces.

Heat Stress Illnesses. The potential for heat stress is a concern when field activities are performed on warm, sunny days, and is accentuated when chemical protective clothing and equipment is worn. Heat stress prevention measures will be implemented if site temperatures are above 70° Fahrenheit.

Precautions to prevent heat stress will include work/rest cycles, so that rest periods are taken before excessive fatigue occurs, and regular intake of water to replace that lost from sweating.

Heat stress due to water loss can be prevented by drinking water, at regular intervals. An adequate supply of potable water and drinking cups will be readily available. If not prevented, heat stress results in illness. Two critical, heat stress related illnesses, heat exhaustion and heat stroke, can be life threatening, if not recognized and treated immediately.

CHEMICAL HAZARDS ASSESSMENT TABLE

(V) TYPE OF HAZARD PROPERTY

- a - CORROSIVE
- b - FLAMMABLE
- c - TOXIC
- d - VOLATILE
- e - REACTIVE
- f - RADIOACTIVE
- g - CARCINOGENIC
- h - INFECTIOUS

(W) ROUTE OF EXPOSURE

- h - SKIN AND/OR EYE CONTACT
- i - INHALATION
- j - SKIN ABSORBTION
- k - INGESTION

(X) ACUTE EFFECTS

- a - ABDOMINAL PAIN
- b - CENTERAL NERVOUS SYSTEM DEPRESSION
- c - COMATOSE
- d - CONVULSIONS
- e - CONFUSION
- f - DIZZINESS
- g - DIARRHEA
- h - DROWSINESS
- i - EYE IRRITATION
- j - FEVER
- k - HEADACHE
- m - NAUSEA
- n - RESPIRATORY SYSTEM IRRITATION
- o - SKIN IRRITATION
- p - TREMORS
- q - UNCONSIOUSNESS
- r - VOMITING
- s - WEAKNESS
- t - STAGGERING GAIT
- u - DIALATED PUPILS
- v - MUSCLE FATIGUE
- w - INSOMNIA
- x - SWEATING
- y - MENTAL IMPAIRMENT

(Y) CHRONIC EFFECTS

- a - CENTRAL NERVOUS SYSTEM
- b - BLOOD
- c - SKIN
- d - BONE MARROW
- e - EYES
- f - RESPIRATORY SYSTEM
- g - LIVER
- h - KIDNEYS
- i - GASTROINTESTINAL TRACT
- j - FETAL DEFECTS
- k - CARCINOGENIC
- l - SUSPECTED CARCINOGEN
- m - CARDIO VASCULAR SYSTEM

CHEMICAL	PEL/TLV (ppm)	VAPOR PRESSURE (mm)	BOILING POINT (deg F)	SOLUB-ILITY	VAPOR DENSITY (air=1)	SPECIFIC GRAVITY (water=1)	FLASH POINT (deg F)	MELTING POINT (deg F)	HAZARD TYPE(V)	EXPOSURE ROUTE(W)	EFFECTS ACUTE(X)	EFFECTS CHRON(Y)
Benzene	0.1	75 mm	176	0.18%	2.77	0.88	12 UEL=7.9%	42 LEL=1.3%	b,c,d,g	i,j,k,h	a,f,h,i,k, l,m,n,s	a,b,c,d, e,f
2-Butanone (Methyl Ethyl Ketone)	200	71	175	28%	2.41	0.81	16 UEL=11.4%	-123 LEL=1.4%	b,c	i,k,h	i,m,k,f,q	a,f
Carbon tetrachloride	2 ST (60min)	91	170	0.05%	5.5	1.59	NA	-9	c,e,g	h,i,j,k	b,m,r,o	a,e,g h,f,l
Chlorodiphenyl (42% Chlorine) (PCB)	.001mg/m3 (skin)	0.001	617	insol	-	1.39	?	-2	c,g	h,i,j,k	i, liver acne	c,e,g
Chlorodiphenyl (54% Chlorine) (PCB)	.001mg/m3 (skin)	<.001	687	insol	-	1.38	?	50	c,g	h,i,j,k	i, liver acne	c,e,g
Chloroform	2	160	143	5%	4.12	1.48	N/A UEL=NA	-82 LEL=NA	c,g,b	i,k,h	f,y,l,k, h,i	g,h,i,m,
o-Dichlorobenzene (1,2-Dichlorobenzene)	50	1	357	0.01%	5.07	1.3	151 UEL=9.2%	1 LEL=2.2%	c,b	i,j,k,h	i,h,liver, kidney	c,e,g,h
p-Dichlorobenzene (1,4-Dichlorobenzene)	75	0.4	345	0.008%	5.07	1.25	150 UEL=?	128 LEL=?	c,g,b	i,k,h	k,i,l,q,liver kidney,swelling	
1,2-Dichloroethylene	200	180-264	118-240	0.4%	3.34	1.27	36 UEL=12.8%	-57 to -155 LEL=5.6%	c,b	i,k,h	i,m,b	f,c,a

CHEMICAL HAZARDS ASSESSMENT TABLE - CONTINUED

CHEMICAL	PEL/TLV (ppm)	VAPOR PRESSURE (mm)	BOILING POINT (deg F)	SOLUB-ILITY	VAPOR DENSITY (air=1)	SPECIFIC GRAVITY (water=1)	FLASH POINT (deg F)	MELTING POINT (deg F)	HAZARD TYPE(V)	EXPOSURE ROUTE(W)	EFFECTS ACUTE(X)	EFFECTS CHRON(Y)
Diesel	100	<1	370	<0.1%	75	86	140 UEL=7.0%	N/A LEL=0.9%	b,c,d,g	i,j,k,h	i,k,f,p,h	a,b,h,j, leukemia
EthylBenzene	100	7.1	277	0.02%	3.66	0.87	59 UEL=6.7%	-139 LEL=1.0%	b,c,d	i,k,h	c,i,k,m,n,p	a,c,e,f
Ethylene Dichloride (1,2-Dichloroethane)	1	64	182	0.9%	-	1.24	419 UEL=16%	-8 LEL=6.2%	c,g,b	i,j,k,h	b,l,q,n,i	h,g,e,c,
Fluorotrichloromethane (Trichlorofluromethane)	1000	690	75	0.1%	-	1.47	NA	-168	c	h,i,k	p,o,frostbite cardiac, incoordination	m,c
Gasoline	100	760	70	0.1%	5	0.74	-36 UEL=7.6%	-36 LEL=1.4%	b,c,d,g	i,j,k,h	i,k,f,p,n	a,b,h,j, leukemia
Hydrogen Sulfide	10 10 min	>760	-77	0.4%	1.19	GAS	NA UEL=44%	-122 LEL=4%	b,c	h,i,k	c,d,f,i,m IDLH	e,f
Lead (as Pb)	0.1 mg/m3 (air)	-	3164	insol	-	11.34	NA	621	b	i,k,h	a,i,p,s	a,b,h i,j
Methane	-	-	-	-	0.416	GAS	-306 UEL=?	-359 LEL=?	b,c	i	h,p asphyxiant	-
Methyl Chloride	50	>760	-12	0.5%	1.8	gas	N/A UEL=17.4%	-144 LEL=8.1%	c,g,b	i,h	f,l,q,s,d, liver,visual disturbance	a,g,h,c
Methylene Chloride	50	350	104	2%	2.93	1.33	? UEL=22%	-139 LEL=14%	c,g,b	i,k,h	r,u,h,l,i, numbness	e,f,m
Napthalene	10	0.08	424	0.003%	4.42	1.15	315 UEL=5.9%	122 LEL=0.9%	c	i,j,k,h	i,k,e,a,m,r,x, jaundice	e,b,g,h c,a
Pentachlorophenol	0.5mg/m3 (skin)	0.0001	588	0.001%	N/A	1.98	N/A UEL=NA	374 LEL=NA	c,g	i,j,k,h	i,m,r,k,l,q,j, n,x,cough	a,f,e,g, h,c,m
Tetrachloroethylene	25	58	189	0.1%	5.83	1.46	90 UEL=NA	-99 LEL=NA	c,g,b	i,k,h	k,l,q,i,o,n visual disturbance	f,m,g,h, a,c
Tetraethyl Lead	.075mg/m3 (skin)	0.15	228	insol	8.6	1.66	200 UEL=?	-202 LEL=1.8%	c	i,j,k	l,c,d,v	a,b,i,e,
Tetramethyl Lead	.075mg/m3 (skin)	22.5	212	insol	6.5	1.99	100 UEL=?	-15 UEL=?	c	i,j,k	l,c,i,d,v	a,b,i,e,
Toluene	100	22	231	0.05%	3.14	0.87	40 UEL=7.1%	-139 LEL=1.2%	b,c,d	i,j,k,h	e,f,h,i,k, n,r,t,u	c,f
Trichloroethylene	25	58	189	0.1%	4.54	1.46	90 UEL=10.5%	-99 LEL=8%	c,g,b	i,k,h	k,f,o,l,q,i,n vis dist	f,m,g, h,a,c
Vinyl Chloride	1	>760	339	.009%		0.89	120 UEL=33.0%	-106 LEL=3.6%	c,g	i	respiratory	a,g,f,b lymphat
Xylene (o-,m-, and p-)	100	7/9/9	285	insol	3.8/3.7/ 3.7	0.87	63/84/ 81 UEL=7.0%	-12/-54/ 56 LEL=1.0%	b,c,d	i,j,k,h	a,e,f,h,i,m, n,q,s	a,b,c,e, g,h,i

APPENDIX I

An initial work/rest cycle of 1 hour to 10 minutes is recommended for protection of field personnel, when heat stress hazard is high. Prior to commencing work, and during each rest period, field personnel should drink at least 16 ounces of water. The recommended work/rest cycle will be adjusted based upon environmental conditions, and the judgement of the Site Safety Supervisor (SSS)/Site Safety Officer (SSO).

Heat Exhaustion. The signs and symptoms of heat exhaustion are headache, dizziness, nausea, weakness, fainting, profuse sweating, loss of appetite, dilated pupils, weak and rapid pulse, shallow and rapid breathing, possible cramps in abdomen and extremities, possible vomiting, difficulty walking, cool and sweaty skin to the touch, pale ashen gray coloring. First aid for heat exhaustion is as follows:

- Remove victim to the decontamination area.
- Decontaminate, if practical, before entering decontamination area.
- Start cooling slowly. Be careful not to cause a chill (rest in shade and apply wet towel to forehead, and/or remove clothing as much as practical).
- Drink cool water slowly, but only if conscious and not in shock.
- If vomiting, and/or the signs and symptoms are not lessening within an hour, contact emergency help and/or transport the victim to the hospital.

Heat Stroke. The signs and symptoms of heat stroke are hot, dry skin to the touch; reddish coloring; body temperature greater than 105° Fahrenheit; no sweating; mental confusion; deep, rapid breathing that progresses to shallow, weak breathing; headache; dizziness; nausea; vomiting; weakness; dry mouth; convulsions; muscular twitching; sudden collapse; unconsciousness. First aid for heat stroke is as follows:

- Immediately remove victim to an uncontaminated zone.
- Cool victim rapidly using whatever means are available, including: shade, opening up and/or removing clothing, soaking clothing/skin with water and fanning, placing victim in vehicle using air conditioner.
- Do not give drinking water to the victim.
- Treat for shock, if needed.
- Transport victim to the emergency room or call for emergency help.

Sunburn. Working outdoors for extended periods of time can cause sunburn to the skin. A sunburn may cause discomfort during subsequent fieldwork or during the use of

Personal Protective Equipment (PPE). Excessive exposure to sunlight is associated with the development of skin cancer. Field personnel should take precautions to prevent sunburn, by using sun-screen lotion and/or wearing hats and long-sleeved garments.

3.0 MONITORING PLAN

On site air and personnel monitoring shall be conducted, as required by Federal or State health and safety regulations, or if conditions indicate. On-site air and personnel monitoring shall also be conducted at the start of each new activity, to characterize the type and degree of chemical exposure from each of the suspected major contaminants for each specific operation, and to determine site control areas.

At a minimum, monitoring will be performed in the breathing zones of the work area. Additional monitoring may occur. At this site, a Flame Ionization Detector (FID) or similar meter shall be used to monitor the air for possible toxic materials exposure to volatile organics on a daily and periodic basis. Test results will be documented. Monitoring will be conducted and documented by the SSS/SSO or SHN designate.

4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Level of Protection: A___ B___ C_X_ D_X_

Level C (Modified)

- Full face or half face respirator equipped with NIOSH approved organic vapor cartridges, and dust and mist filters.
- Chemically resistant boots
- Chemically resistant gloves (latex or nitrile)
- Chemical splash goggles (if a half face respirator is used)
- Hard Hat

Level D

- Chemically resistant boots
- Chemically resistant gloves (latex or nitrile)
- Chemical splash goggles
- Hard hat

At a FID organic vapor detection of 10 ppm or above, and at any detection of asbestos, respirators and other associated Level C PPE will be donned. Respirators will be removed when in areas where it is determined to be safe by the SSS/SSO or acting SHN representative. Additionally, as a general rule, respirators will be donned when any vapors are nasally detected.

Respirators will be used if indicated by site conditions to minimize volatile and ambient air organic chemical exposure by inhalation, and in the case of full face respirators to minimize exposure to the eyes. A full face respirator provides a higher level of respiratory protection, as well as preventing vapor contact with the eyes. Organic vapor/acid cartridges will be used, and new cartridges will be installed daily at a minimum, or as exposure and hours of use indicate. To prevent exposure to particulates (dust, mists, or fumes), and to extend the usability of the organic vapor cartridges, dust and mist filters will be used if any asbestos is detected or if indicated by site conditions. Respirators, cartridges, and filters will be NIOSH approved.

Boots, protective clothing, and gloves prevent direct contact with potential contaminants in the soil, water and ambient air, and provide an easy method of personal decontamination.

Splash goggles provide protection from possible liquid splashing in the eyes, and in the case of sealed goggles, limit the contact of the ambient air with the eyes.

All employees of SHN and subcontractors will meet the minimum level of PPE when entering or working in an area of known contamination specific to the job task. If the level of contamination is unknown, the maximum level of PPE will be donned prior to entering the suspected contamination zone. Once appropriate site monitoring has been conducted to indicate the level of contamination, the level of PPE may be reduced, as appropriate. If known or suspected conditions require an increase in the level of PPE in the contamination zones or newly designated contamination zones, all operations will immediately cease until appropriate changes in PPE are made.

5.0 SITE CONTROL

Whenever feasible, personnel, equipment, and decontamination station placement shall be upwind of any suspected source of contamination. During site activities, the area will be divided into three basic areas: a contamination zone, a contamination reduction zone, and an uncontaminated zone. The uncontaminated zone will be the area(s) of the project that can be documented as not indicating any detectable levels of contamination by the selected methods of site monitoring presented in this SSP. At this project site, the contamination reduction zone and uncontaminated zone may be the same, but must be determined based on the site monitoring program.

No person shall be allowed in an area designated as a contamination zone, or a contamination reduction zone (that is not also a uncontaminated zone) unless authorized by the SSS/SSO or acting SHN representative. Persons entering areas other than uncontaminated zones must comply with the PPE provisions of this plan and currently satisfy all the requirements specified in 29 CFR 1910.120.

The SSS/SSO or acting SHN representative may and will cease operations if the site control portions of this SSP are not followed.

6.0 DECONTAMINATION PROCEDURES

Decontamination Areas

Decontamination areas will be established prior to the commencement of site operations in contamination reduction zones or uncontaminated zones. Decontamination areas may be reestablished in response to changes in environmental conditions and site activities by the SSS/SSO or SHN representative.

Equipment Decontamination

All sampling equipment will be appropriately decontaminated between each sampling event and before leaving the site. All non-disposable PPE will be appropriately decontaminated before leaving the site. Wash rinseate will be placed in a container and, subsequent to sample collection, will be properly disposed. Used, disposable PPE will be contained in a separate container and held until test results are reviewed. It is anticipated that, for this project, normal disposal will be suitable for disposable PPE. If soil test results indicate site contamination at levels designated as hazardous waste by State or Federal regulations, the disposable clothing will be tested to determine the appropriate method of disposal.

Decontamination of personnel will be accomplished by removing contaminated clothing and gear, washing exposed skin with a solution of deionized water and liquinox, and rinsing with deionized water.

Emergency Decontamination

The decision whether or not to decontaminate a victim is based on the type and severity of the illness or injury and the nature of the contaminant. For some emergency victims, immediate decontamination may be an essential part of life-saving first aid. For others, decontamination may aggravate the injury or delay life-saving treatment. If decontamination does not interfere with essential treatment, it should be performed.

- **If decontamination can be done:** Wash, rinse, and/or cut off protective clothing and equipment.

- **If decontamination cannot be done:** Wrap the victim in blankets, plastic, or rubber to reduce contamination of other personnel. Alert emergency and off site medical personnel to potential contamination; instruct them about specific decontamination procedures if necessary. Send along site personnel familiar with the incident.

If immediate medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential life-saving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life, decontamination must be performed immediately. If an emergency due to a heat-related illness develops, protective clothing should be removed from the victim as soon as possible to reduce the heat stress.

7.0 GENERAL SAFETY REQUIREMENTS

The following general safety procedures shall be followed by all persons entering and/or working in the immediate area of project activities:

1. All personnel involved with these activities shall be aware of the location of buried utilities. USA Underground Alert shall be notified, if required, at least 48 hours in advance of sampling and will mark and locate any underground utilities located within or immediately adjacent to the work area.

2. No SHN or subcontractor personnel will be allowed on site without the prior knowledge and consent of the SSS/SSO.

3. There will be no field activities conducted without sufficient backup personnel. At a minimum, two persons who currently satisfy the health and safety requirements specified in 29 CFR 1910.120 (e) must be present at the site while field activities are in progress.

4. All personnel involved with the project shall bring to the attention of the SSS/SSO or resident SHN project representative any unsafe condition or practice associated with site activities.

5. Team members must avoid unnecessary contamination (such as, walking through known or suspected "hot" zones or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated equipment).

6. Respiratory devices may not be worn with beards, or under other conditions that prevent a proper seal.

7. Respiratory devices may not be worn with contact lenses.

8. No deep test pit entry (more than 5 feet in depth) will be allowed without installation of trench shoring, or other approved means of excavation security designed and installed in conformance with current Cal OSHA/OSHA regulations.

9. Smoking will only be allowed in designated areas.

10. Hard hats will be worn within 10 feet of the operation of any heavy equipment.

11. Proper hearing protection will be worn at all times in conformance with current Cal OSHA/OSHA regulations.

12. Proper eye protection will be worn to protect the eye area from liquid splashes or flying debris.

8.0 EMERGENCY RESPONSE PLAN

The SSS/SSO or SHN designate shall be immediately notified of any injury or accident occurring at this site.

The following is a list of emergency telephone numbers if an injury requires off site medical aid.

EMERGENCY RESPONSE CONTACTS	TELEPHONE NO.
• GENERAL EMERGENCY MEDICAL FACILITIES:	911
• AMBULANCE/FIRE DEPARTMENT/POLICE:	911
• HOSPITAL:	
Mad River Community HospitaL 3800 Janes Road Arcata, CA 95521	707/822-3621
• POISON CONTROL HOTLINE:	415/476-6600

GENERAL CONTACTS	TELEPHONE NO.
• Martin Lay, SHN (Environmental Engineering Dept. Dir.)	707/441-8855
• Dennis Scott (Eel River Sawmill)	707/725-6911

In the event of an emergency, the above agencies and persons shall be appropriately notified immediately following the necessary emergency response contacts.

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GOVERNMENT CONTACTS	TELEPHONE NO.
• California Regional Water Quality Control Board, North Coast Region	707/576-2220
• State Office of Emergency Services	800/852-7550
• Humboldt County Environmental Health Dept.	707/445-6215

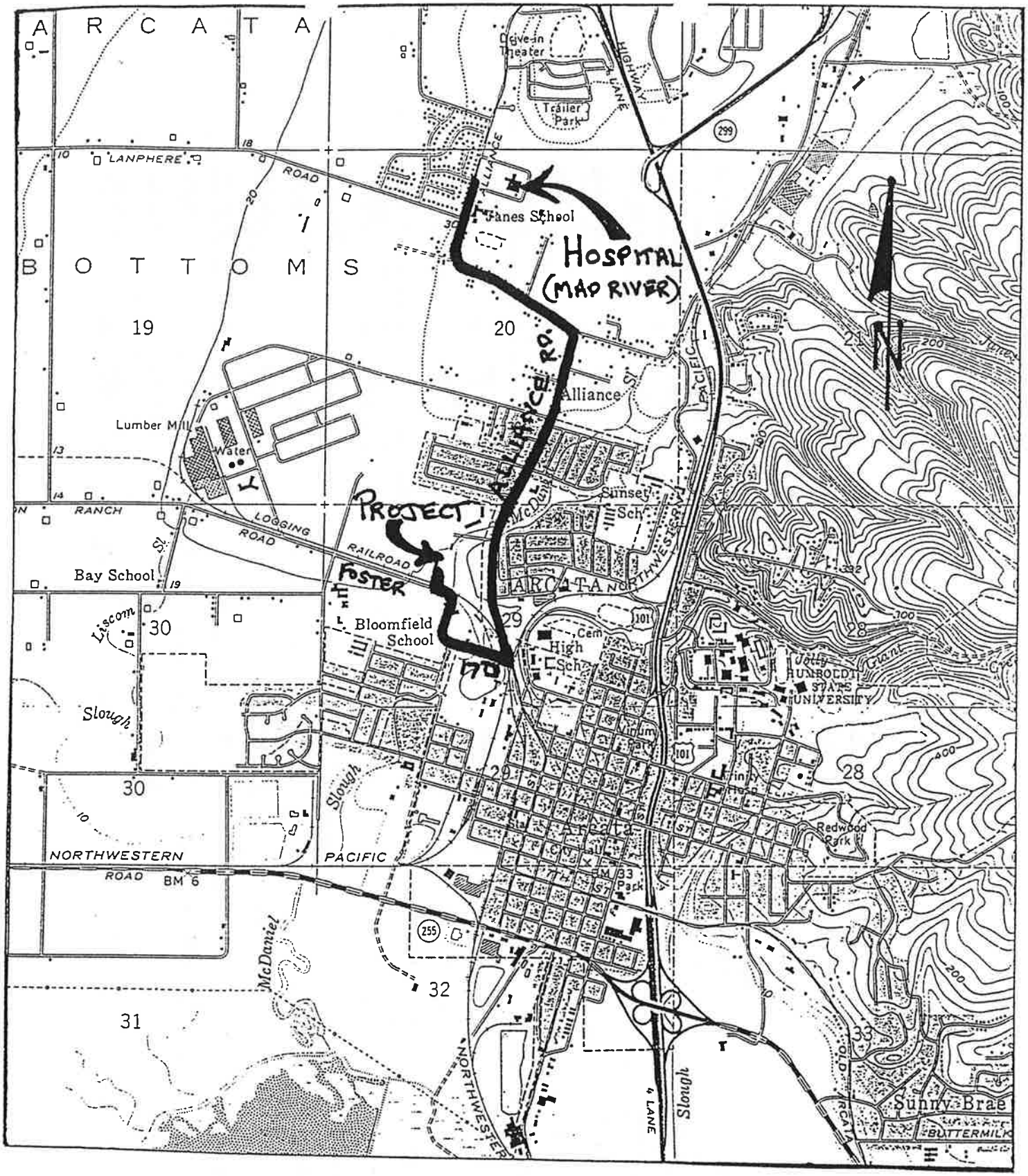
In the event of an unauthorized release of a potentially hazardous materials, the above government agencies will be notified.

9.0 DOCUMENTATION

Documentation of SHN employee medical surveillance, training, and respirator fit test records is maintained at SHN's corporate office in Eureka, California, with copies provided to each employee. SHN subcontractors are responsible to maintain their own records.

Compliance with the Site Safety Plan will be documented by execution of a sign-off sheet during the site safety briefing(s) and a daily record. By signing these sheets, persons to be involved in the project field activities acknowledge willingness to comply with this SSP throughout the period of the current field activities. Safety meetings will be scheduled at the beginning of field operations, and will be held at the start of each day. Field monitoring results will be recorded and retained on site or in the SHN files.

APPENDIX I



HOSPITAL LOCATION MAP

SHN

SHN - CONSULTING ENGINEERS AND GEOLOGISTS
OSHA 29CFR 1910.120 TRAINED AND CERTIFIED PERSONNEL

Name	Respirator Fit Test	40 hr Training 1910.120	Supervisor Training 1910.120	8 hr Refresher Training	Medical
Johanna Ambler	3/13/90	7/21/89		4/9/94	12/12/94
John Aveggio		9/29/88	9/30/88	4/9/94	5/24/94
Pat Barsanti	4/27/90	5/2/90	5/2/90	11/11/94	10/13/94
Curtis Coburn	10/18/93	10/8/93		11/11/94	11/3/94
David Collentine	4/7/92	Equivalent		5/13/94	5/2/94
Chris Johnston		3/6/92		11/11/94	5/26/94
Amy Kornberg	12/1/89	7/29/89		10/7/93	10/19/93
Todd Lark	2/27/92	3/6/92		11/11/94	12/7/93
Marty Lay	7/27/89	7/30/88	7/30/88	11/12/93	7/25/94
Frans Lowman		87		11/11/94	10/17/94
Jeff Nelson		11/9/90		11/11/94	6/19/91
David Paine	4/27/90	5/2/90	5/2/90	11/11/94	3/24/95
Jeff Sawyer		7/22/91		11/11/94	9/2/94
Tom Stephens	7/28/89	7/30/88	7/30/88	5/13/94	6/25/92
David Williams		5/2/90		11/11/94	8/4/94
Sheri Woo	7/28/89	87	12/15/88	11/11/94	3/31/93

APPENDIX I

HAZARDOUS MATERIALS SITE OPERATIONS
SITE SAFETY MEETING ATTENDANCE
SHN CONSULTING ENGINEERS & GEOLOGISTS

JOB NAME		ACTIVITY		JOB #		
GIVEN BY:		SIGNATURE		DATE		TIME
Company/ Agency	Name	Operation/ Function	Signature	Read SSP Y/N	29CFR1910.120(e) 40hr Y/N	24hr Y/N

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HAZARDOUS MATERIALS SITE OPERATIONS
DAILY RECORD
SHN CONSULTING ENGINEERS & GEOLOGISTS

JOB NAME		ACTIVITY				JOB #		
Company/ Agency	Name	Operation/ Function	Signature	Time In	Time Out	Date	29CFR1910.120(e) 40hr Y/N	24hr Y/N

APPENDIX I

INITIAL GROUNDWATER INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA

Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

Prepared for:

EEL RIVER SAWMILLS, INC.

SHN
Consulting Engineers & Geologists

812 W. Wabash
Eureka, CA 95501
707/441-8855

AUGUST 1995

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Reference: 930121.100

August 14, 1995

Mr. Dale Dell 'Osso
Humboldt County Department of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: INITIAL GROUNDWATER INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE, ARCATA, CALIFORNIA, HUMBOLDT AP #505-161-11, LOP CASE #12518 (FORMERLY SPECIALTY MILL)

Dear Mr. Dell' Osso:

The attached Report of Findings for the property located at 2000 Foster Avenue, Arcata, California, is being submitted by SHN Consulting Engineers & Geologists, Inc. for and with the approval of Eel River Sawmills, Inc. (ERS).

Pursuant to recommendations presented in a 1993 Phase I Environmental Site Assessment prepared by SHN for the property, and a preliminary Phase II field investigation conducted by SHN in 1994, a groundwater investigation was initiated by ERS and conducted by SHN in June of 1995. Results of soil and groundwater sampling on the property during this initial groundwater monitoring well investigation, as well as recommendations for further site soils and groundwater investigative work are presented in the report.

Please review the enclosed information and call me at 707/441-8855, or Dennis Scott, (ERS), at 707/725-6911, if you have any questions.

Thank you for your cooperation with this project.

Sincerely ,

SHN CONSULTING ENGINEERS & GEOLOGISTS

Martin E. Lay, PE
Project Manager

MEL:ls:lms
Enclosure
cc w/enclosure: Dennis Scott, Eel River Sawmills, Inc. (1)
Bonnie Rolandelli, NCRWQCB (1)
Steve Tyler, City of Arcata (1)

E:\930121\GWINVEST.RPT

APPENDIX J

Reference: 930121.100

INITIAL GROUNDWATER INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA

Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

Prepared for:

EEL RIVER SAWMILLS, INC.

Prepared by:

SHN
CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash
Eureka, CA 95501
707/441-8855

August 1995

QA/QC:JLA JLA

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INITIAL GROUNDWATER INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE, ARCATA, CALIFORNIA
Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

EXECUTIVE SUMMARY

Eel River Sawmill (ERS) is submitting the following summary of continued groundwater and soils field investigation on the subject property in response to the Humboldt County Division of Environmental Health (HCDEH) letter of March 8, 1995, and to allow ERS to proceed with obtaining regulatory clearance for residential type site development. The project site is an abandoned, historic, lumber mill. ERS retained SHN Consulting Engineers & Geologists, Inc. (SHN) to conduct site investigations for potential soil and groundwater contamination that may impact property transfer and potential residential development. SHN has conducted a Phase I Environmental Site Assessment and initial Phase II field investigations prior to the initial groundwater investigation covered by this Report of Findings (ROF).

Historic lumber milling operations have, at specific locations, impacted the site soils and (potentially) the upper groundwater. Analytical results from two separate 1994 field investigations (soil and groundwater sampling), have indicated minor to moderate petrochemical contamination of the soil and groundwater. No wood preservatives of any type were reported or indicated to have been used at the site, and no volatile or semi-volatile organic compounds have been detected in soil or groundwater samples.

Specific areas of documented soil contamination include the historic fuel tank area, the vehicle maintenance area, the debarker area, isolated areas of the old log deck, the mill leachfield area, and isolated general site areas. The levels of soil contamination (petrochemical) at the fuel tank area, debarker area, and vehicle maintenance area are sufficient to warrant remedial action. Groundwater characterization, from the newly installed groundwater monitoring wells, initially indicates potential petrochemical contamination associated with the former fuel tank area merging into the adjacent leachfield area.

We recommend the following action be initiated to allow ERS to proceed with planning for property transfer and development.

A. Schedule a meeting to discuss the findings presented in this report and to determine a course of action for further investigation and/or addressing remedial action alternatives relative to soil and groundwater contamination at the site.

B. Conduct three additional quarterly groundwater monitoring well sampling and groundwater level measuring events. This will complete characterization for one full hydrologic cycle. Analyze the groundwater samples for total petroleum hydrocarbons

as gasoline (TPHG), as diesel (TPHD), and as motor oil (TPHMO); the metals Cd, Cr, Ni, Pb, and Zn; and tannins and lignins. Prepare a monitoring letter report for each event and submit to HCDEH. The final (4th quarter) monitoring report shall include a summary of findings, and recommendations for additional investigation, if any.

C. Consider additional groundwater investigation, only after completion of soil remedial action, with review of the associated verification sampling results, and upon review of the annual groundwater monitoring data described in B.

D. Based on SHN's conclusion that the extent and characterization of soil contamination for the debarker, vehicle maintenance, and fuel tank areas is sufficient to finalize soil remedial action, ERS and SHN will present the HCDEH with a preferred remedial action plan after HCDEH has reviewed, and commented to ERS, on the findings of this initial groundwater investigation.

E. Conduct further investigation of soils in the septic tank/leachfield area for potential contamination with petroleum hydrocarbons, in the gasoline, diesel, and motor oil range, and the metals Cd, Cr, Ni, Pb, and Zn. A worst case sample from this area should also be analyzed for semi volatile compounds.

F. Discuss the collection of water and/or sediment samples from drainage ditches adjacent to the property, as requested by the HCDEH in its letter of June 14, 1995, with HCDEH prior to initiating sampling of the ditch water or sediment. SHN suggests the discussion due to potential non-mill operation impacts (railroad, Foster Avenue) to some of the ditches.

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INITIAL GROUNDWATER INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE, ARCATA, CALIFORNIA
Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

INTRODUCTION

This Initial Groundwater Investigation Report of Findings is being submitted by SHN Consulting Engineers & Geologists, Inc. (SHN), on behalf of and with the approval of EEL RIVER SAWMILLS, INC. (ERS) to document June 1995 subsurface soil and groundwater investigations conducted by SHN on the subject site. An unauthorized release has been filed for this site. The site is under the Local Oversight Program (LOP) regulatory review of the Humboldt County Division of Environmental Health (HCDEH). Subsurface investigative work was requested by HCDEH in a letter dated March 8, 1995 submitted to ERS (see Appendix A).

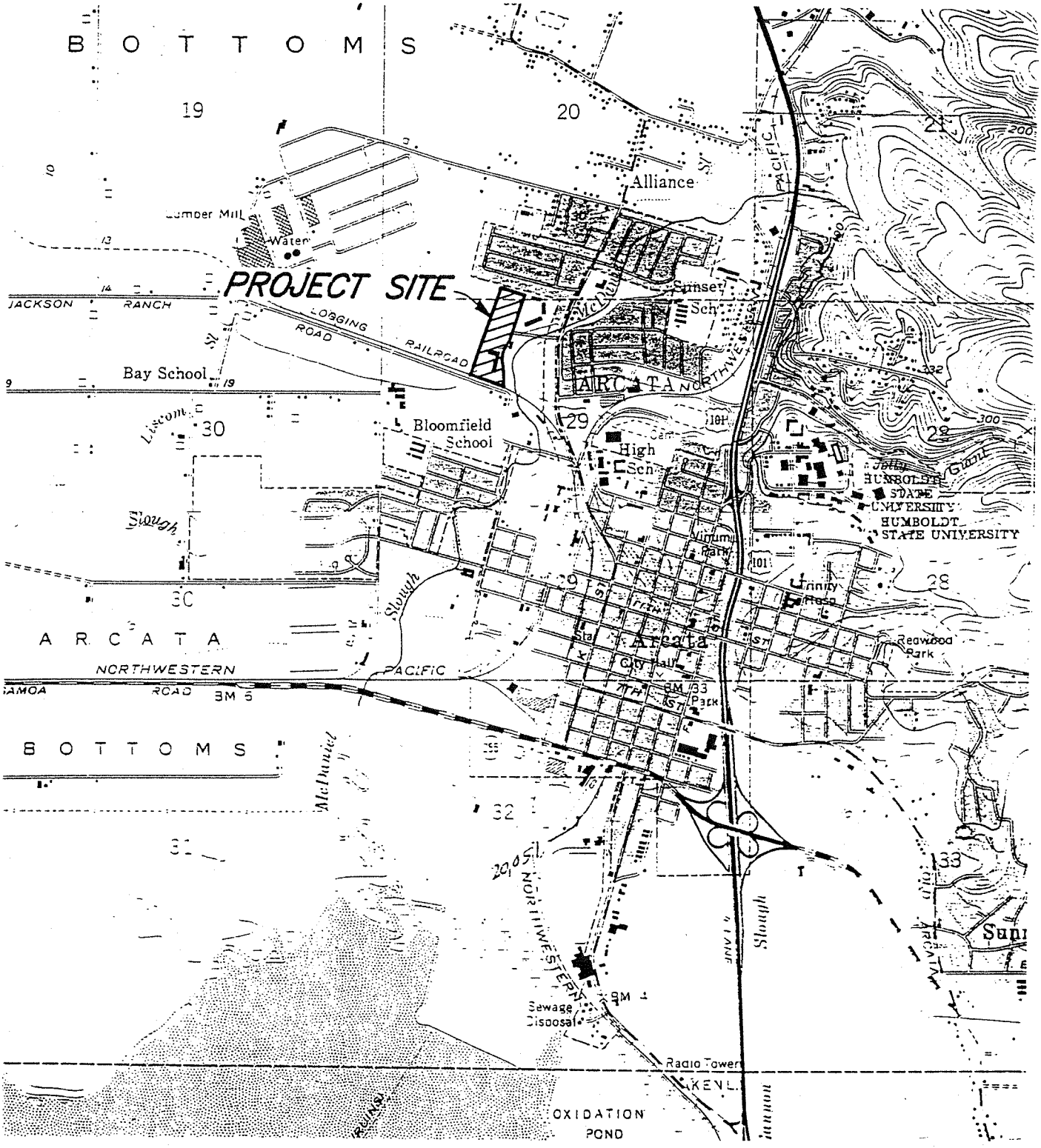
Work was conducted by SHN in general conformance with the Work Plan for Hydrogeologic Investigations and Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Humboldt County AP# 505-161-11, Arcata, CA (SHN, May 1995; excerpt attached in Appendix A). Conditional written approval of the work plan, in a letter dated June 14, 1995, was submitted by HCDEH to SHN (see Appendix A).

The report follows the suggested format outlined in the Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks (August 10, 1990), and the California Regional Water Quality Control Board, North Coast Region (RWQCB), "Appendix A" (February 24, 1992).

Included in this report of findings is a background history of the site, a description of the subsurface soils and initial groundwater monitoring well investigation conducted by SHN, the sampling and testing methodologies used, a summary of the analytical results, site maps showing the sampling locations, the subsurface exploration logs, and a discussion of results. We have also included recommendations for further subsurface investigation and soils remediation alternatives.

OBJECTIVE

The ultimate objective of ERS with respect to the property is to be able to sell the property, potentially for future single or multiple family residential development. The objective of this report is to respond to the request from HCDEH for subsurface investigation to further characterize the soil and groundwater quality in the vicinity of previously documented site soils and potential groundwater contamination (SHN, January 1995).



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA

VICINITY MAP

SHN

SHN 930121.100
1995
FIGURE 1

SITE DESCRIPTION

Site Location

As seen in Figure 1, the approximately 17 acre project site is located northwest of the City of Arcata, California, in the northwest 1/4 of Section 29, Township 6 north, Range 1 east, Humboldt Base and Meridian. The site is located at 2000 Foster Avenue, adjacent to the Arcata City limits, in an unincorporated area of Humboldt County. It is legally delineated as Humboldt County Assessor's parcel number 505-161-11.

Site Layout

The project site is situated at an elevation of approximately 20 to 25 feet above mean sea level, in the relatively flat alluvial plain of the Mad River referred to as the Arcata Bottoms. The Arcata Bottoms area gently slopes down in a westward direction.

Surface waters closest to the project sites are McDaniel Slough (Janes Creek) located on the eastern boundary of the project site and Liscom Slough located approximately 0.75 of mile west of the project site (Figure 1).

Local surface drainage for the project site is to the southwest, and the site is relatively flat with a general slope of less than 1 percent. An earthen ditch on the north side of the railroad tracks conveys drainage to the east, where it is received into the waters of McDaniel Slough/Janes Creek (Figure 2).

Site Hydrogeology

Subsurface investigations conducted by SHN provide the basis for the following discussion of site hydrogeologic conditions. The project site is located on a moderately sloping surface of a sequence of Holocene age stream deposits (Janes Creek alluvium). Sedimentary deposits encountered in the test pits, well, and piezometer borings consisted of up to 4.25 feet of fill associated with previous industrial use of the site. The fill is comprised predominantly of sandy to silty gravel and well rounded cobbles to 4 inches in maximum dimension. Common wood debris (sawdust, bark, log trimmings, and milled lumber), occasional concrete rubble, and metal debris were also encountered in the fill. The fill is underlain by alluvial deposits consisting of interbedded medium to very stiff silty to sandy clay, sandy to clayey silt, and dense silty to clayey sand.

Shallow, unconfined to semi-confined groundwater is present in the alluvial deposits. Based on groundwater elevations measured in June 1995, shallow groundwater beneath the site flows predominantly toward the southeast at an average gradient of 0.008. Confined groundwater is present in deeper alluvial deposits (encountered in well MW-3), and is separated from the shallow groundwater by low permeability silty clay and very clayey silt.

EXPLANATION

TP–13 — TEST PIT LOCATION AND DESIGNATION

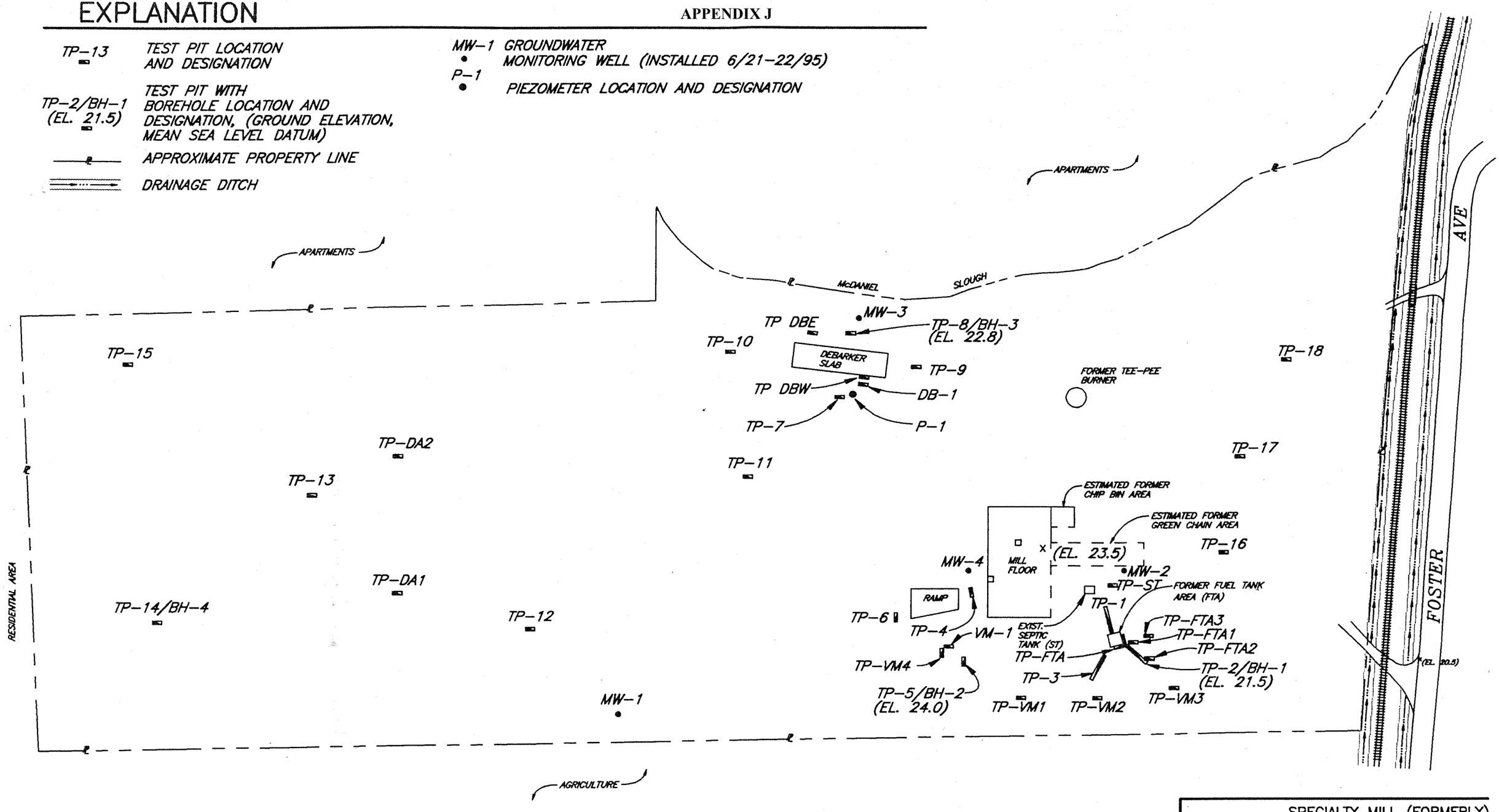
TP–2/BH–1 (EL. 21.5) — TEST PIT WITH BOREHOLE LOCATION AND DESIGNATION, (GROUND ELEVATION, MEAN SEA LEVEL DATUM)

℄ — APPROXIMATE PROPERTY LINE

DRAINAGE DITCH

MW–1 — GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95)

P–1 — PIEZOMETER LOCATION AND DESIGNATION



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

SITE PLAN

SHN 930121.100
AUGUST, 1995

FIGURE 2

SHN

cc-2123

SITE BACKGROUND

Historical use of the property, until 1950, was open space, undeveloped land, and reportedly pasture. (SHN, 1993) An old growth Redwood lumber mill was constructed on the site in 1951, and the mill, through various owners and changes in milling operations, continued operation until 1986 (most recently as Specialty Mill). The mill structures were then dismantled and the equipment was liquidated. Remnants of the mill operations existing on site at present include concrete slab foundations for the sawmill, log debarker, and mill loading ramps. Additionally, the northern half of the site is a long used log deck area with rocked loading corridors and wood debris laden deck areas. No site development has been conducted since the mill dismantling operations.

Two preliminary subsurface investigations were conducted at the site by SHN in February and May 1994. Findings of these investigations were reported to HCDEH by ERS (SHN, January 1995).

Several areas of potential sources of petrochemical contamination were identified in the previous investigations. These areas were further investigated during the June 1995 field work and documented in this report. Areas of potential concern are depicted on Figure 2, and include the following:

- **Fuel Tank Area (FTA).** Located at the southwest portion of the property, the fuel tank area included historic underground fuel tank (UGT) and above ground tank (AGT) fueling facilities (contents reportedly gasoline and diesel, of unknown capacity; SHN, 1993).

- **Septic Tank Area (ST).** A concrete, domestic, wastewater septic tank was found on the site southwest of the mill structure and east of the fuel tank area location. A septic tank effluent leachfield area associated with the practices involved with septic tank usage has been estimated, but not fully documented.

- **Vehicle Maintenance Area (VM).** Vehicle maintenance operations are not well documented as to site specific location, but historical photograph review and personnel interviews conducted for the Phase I environmental site assessment indicated a vehicle maintenance area that was located northwest of the mill and west of the "ramp" area. (SHN 1993)

- **Debarker Area (DB).** The log debarking structure was located northeast of the mill, adjacent to McDaniel Slough. A remnant concrete and steel foundation remains.

- **Deck Area (DA-general site).** Raw logs brought to the site for milling were stored to the north of the mill structure in decks running south to north. Access corridors ran between the log decks. The access corridors onto the site at the south and within the log deck area appear to have been heavily rocked, and are still well defined.

SITE INVESTIGATIVE WORK

SHN planned and initiated subsurface investigations to be in conformance with current regulatory guidelines, as recommended by the California State Water Resources Control Board, Resolution No. 92-49. Work was conducted in general conformance with the HCDEH approved work plan (SHN, May 1995) mentioned above. The following work plan exceptions were discussed between SHN and HCDEH staff on June 19, 1995, and were also made in the field to further document encountered field conditions:

- Analyzed all groundwater for semi-volatile compounds (EPA Method 8270)
- Analyzed selected soil samples from MW-3 and MW-4 for EPA 8270
- Analyzed all soil and groundwater samples for TPHMO (EPA Method 3550 GCFID)
- Analyzed soil and groundwater samples from MW-4 for TPHG and benzene, toluene, ethylbenzene, and total xylenes (BTEX)
- Deleted soil and groundwater analysis for total petroleum hydrocarbons by infrared spectroscopy (TPHIR) from all monitoring well samples
- Field added shallow soil sampling locations at the vehicle maintenance and debarker areas to be analyzed for TPHIR
- Added Piezometer P-1 to help verify and document shallow groundwater flow direction and gradient
- Completed well MW-3 in a second, deeper aquifer

SUBSURFACE INVESTIGATION

Based on the results of February and May 1994 soil and groundwater sampling, a hydrogeologic investigation was conducted to initially characterize the groundwater in the assumed downgradient direction from specific areas of concern with previously documented soils contamination. Appendix B presents a summary of laboratory results collected on the project to date.

On June 21 and 22, 1995, SHN personnel supervised the drilling and installation of 4 groundwater monitoring wells and 1 piezometer, and collected soil samples. Subcontracted drilling services were provided by All Terrain Exploration Drilling, Pleasant Grove, California. A site safety tailgate meeting was conducted on site by SHN personnel prior to the start of the fieldwork. Work was conducted in accordance with the May 1995 work plan (Appendix A), with the exceptions listed below:

- **Well MW-3** was located downgradient of the former debarker, and was completed in a lower, confined aquifer. No groundwater was encountered in the shallow water bearing zone where first groundwater was expected and encountered in other site

monitoring wells. The lack of free groundwater in the shallow water bearing zone at this location may be the result of interception by the existing, deep concrete foundation of the former debarker.

- **Piezometer P-1** was installed immediately upgradient of the former debarker to verify the presence of groundwater in the shallow water bearing zone at this location, and to provide another shallow groundwater elevation monitoring point for determination of shallow groundwater gradient and flow direction. Piezometer P-1 was installed in accordance with the methods described in the monitoring well installation section of the May 1995 work plan, except that bentonite seals were constructed with bentonite chips, instead of bentonite pellets.

Monitoring well and piezometer locations and designations are shown on Figure 2. Subsurface exploration logs with lithologic descriptions and well/piezometer construction details are included in Appendix C.

Boreholes for monitoring wells MW-1, MW-2, and MW-4, and piezometer P-1 were advanced to depths of between 10 and 14 feet. Well MW-3 was advanced to a depth of 24 feet. Soils encountered in the well/piezometer boreholes consisted of up to approximately 3 feet of silty, sandy, predominantly gravelly fill, underlain by interbedded sandy silt and silty sand to depths of up to 13 feet. Low permeability silty clay and very clayey silt underlay the interbedded silt and sand strata. In well borehole MW-3, the silty clay/very clayey silt was approximately 10 feet thick, and was underlain by interbedded silty sand and sandy silt to approximately 21 feet, with increasing silt/clay content from 21 feet to the total depth of the borehole (24 feet). Groundwater in the shallow water bearing zone was first encountered in well/piezometer boreholes at depths of between approximately 4 and 9 feet below ground surface. Groundwater (in a deeper aquifer) in well borehole MW-3 was first encountered at a depth of approximately 18.5 feet below ground surface.

Soil samples for laboratory analysis were collected from each of the well boreholes, as proposed in the May 1995 work plan, but not from the piezometer borehole.

On June 27, 28, and 29, 1995, SHN personnel developed the monitoring wells, collected groundwater samples, and measured groundwater elevations in the monitoring wells and the piezometer. Samples for Quality Control/Quality Assurance (QA/QC) purposes included laboratory-prepared travel blanks and one blind duplicate groundwater sample (from well MW-4). Travel blanks accompanied the samples from collection through delivery to the laboratory, to determine the potential for cross contamination during sample storage or transport. A duplicate sample was collected for comparison with the results of each primary sample to determine the reproducibility of the analytical method. Samples were submitted under chain-of-custody to North Coast Laboratories, Ltd. (NCL) of Arcata, California to be selectively analyzed for the following constituents:

- Total Petroleum Hydrocarbons as Gasoline (TPHG)
- Total Petroleum Hydrocarbons as Diesel (TPHD)
- Total Petroleum Hydrocarbons as Motor Oil (TPHMO)
- Total Petroleum Hydrocarbons by Infrared Spectroscopy (TPHIR)
- Extractable Organics by U. S. Environmental Protection Agency (EPA) Method 8270

- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Tannins and Lignins (groundwater samples only)
- Cadmium, Chromium, Nickel, Zinc, and/or Lead

Soil Sampling Results

Analytical results for the June 1995 subsurface investigation are summarized in Table 1 on the following page. A summary of project-to-date analytical results of sampling conducted by SHN is presented in Appendix B. Laboratory reports of analytical results and chain-of-custody documentation are presented in Appendix D. NCL conducted the analytical testing for all groundwater and soil samples collected by SHN. The following discussion of sampling results presents the findings for each location (See Figure 2).

MW-1 MW-1, located upgradient of the other monitoring wells, represents assumed background metal concentrations and was anticipated to have no soil contamination due to its location at the western property boundary. No contaminants of concern were detected at this location.

MW-2 The former fuel tank/leachfield downgradient area is represented by MW-2. Petroleum hydrocarbon concentration levels, above laboratory detection limits, as diesel (TPHD, 13 ug/g @ 3-3.5), with elevated (above background) lead (Pb, 18 mg/kg @ 2.5-3) were documented. No other constituents of concern were detected.

MW-3 Samples from MW-3, located downgradient of the debarker area, indicated detectable TPHMO (24 ug/g @ 1-1.5) and elevated nickel (Ni, 110 mg/kg @ 6-6.5 & 16-16.5). Other constituents of concern were nondetectable or at background levels (metals).

MW-4 MW-4 represents the area downgradient of the former vehicle maintenance area. Petroleum hydrocarbon contamination as gasoline (TPHG, 1.2 ug/g @ 4.5-5), TPHD (38 ug/g @ 4-4.5), motor oil (TPHMO, 26 ug/g @ 4-4.5), and (TPHIR, 3600 ug/g @ 5.5-5.75) was detected. Metals do not exceed background levels and no other constituents of concern were detected.

DB-1 This debarker area location was selected by SHN for obtaining a near surface soil sample, to be tested for total petroleum hydrocarbons, due to previous detectable soil contamination in the area. No TPHIR was detected at 1.75 feet below the ground surface.

VM-1 SHN selected this vehicle maintenance area location to obtain a near surface soil sample for further TPHIR characterization of this previously documented soil contamination area. Sample VM-1, from 1.5 feet below ground surface, indicated detectable TPHIR at 82 ug/g.

TABLE 1. SUMMARY OF JUNE 1995 SOIL AND GROUNDWATER ANALYTICAL RESULTS

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8270	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MW-1	1 - 1.5	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	1.5 - 2	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	0.5 - 1	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	51	62	60	11
MW-1	9.5 - 10	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	9 - 9.5	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8.5 - 9	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	72	83	77	10
MW-2	3.5 - 4	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-2	3 - 3.5	06/21/95	13 (b)	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2.5 - 3	06/21/95	--	--	--	--	--	--	--	--	--	--	--	--	--	18
MW-3	1.5 - 2	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	1 - 1.5	06/22/95	<1.0	24	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	0.5 - 1	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	27	30	65	22
MW-3	7 - 7.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	6.5 - 7	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6 - 6.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	79	110	65	9.5
MW-3	7.5 - 7.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
MW-3	8 - 8.5	06/22/95	--	--	--	--	--	--	--	--	<1600*	--	--	--	--	--
MW-3	17 - 17.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	16.5 - 17	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	16 - 16.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	88	110	71	11
MW-4	4.5 - 5	06/22/95	--	--	1.2 (c)	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-4	4 - 4.5	06/22/95	38 (a)	26	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5 - 5.5	06/22/95	--	--	--	--	--	--	--	--	<1600*	--	--	--	--	--
MW-4	3.5 - 4	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	74	90	74	10
MW-4	5.5 - 5.75	06/22/95	--	--	--	3600	--	--	--	--	--	--	--	--	--	--
VM-1	1.5	06/22/95	--	--	--	82	--	--	--	--	--	--	--	--	--	--
DB-1	1.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--

Sample ID	Date	Tannin & Lignin	TPH Diesel	TPH Motor Oil	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	*8270/ 8080	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Groundwater Samples		(mg/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-1	06/28/94	0.43	<50	<500	<50	<0.50	<0.50	<0.50	<0.50	<50 **	<0.010	0.022	0.052	0.03	<0.020
MW-2	06/29/94	1.1	74 (b)	<500	<50	<0.50	<0.50	<0.50	<0.50	<50 **	--	--	--	--	0.036
MW-3	06/29/94	2.3	<50	<500	<50	<0.50	<0.50	<0.50	<0.50	<50 **	<0.010	<0.0050	<0.020	<0.020	<0.020
MW-4	06/29/94	1.7	<50	<500	<50	<0.50	<0.50	<0.50	<0.50	<50 **	<0.010	0.062	0.11	0.061	<0.020
MW-4 (QC-1)	06/29/94	1.8	<50	<500	<50	<0.50	<0.50	<0.50	<0.50	<50 **	<0.010	0.066	0.11	0.057	<0.020

-- = Not tested

TPHIR = Total Petroleum Hydrocarbons, analyzed using infrared spectrophotometry

** For a full list of EPA 8270 and 8080 constituents, and detection limits see American Environmental Network Laboratories results.*

QC = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.

APPENDIX J

Groundwater Sampling Results

Groundwater samples were collected from the newly installed monitoring wells on June 28 and 29, 1995 in conformance with the work plan, with the additions noted in the Site Investigation section. Well installation permits approved by HCEHD are included in Appendix E. Table 1 summarizes the analytical results, and Figure 2 shows the sampling locations.

MW-1 Except for tannins and lignins (0.43 mg/L), no constituents of concern were detected. Detected metals Chromium (Cr, 0.022 mg/L), Nickel (Ni, 0.052 mg/L), and Zinc (Zn, 0.030 mg/L), are within the background range for the soil type encountered (based upon other local site information).

MW-2 TPHD (74 ug/L), lead (Pb, 0.036 mg/L), and tannins and lignins (1.1 mg/L), were detected in MW-2. No other constituents of concern were detected.

MW-3 Except for tannins and lignins (2.3 mg/L), no other constituents of concern were detected.

MW-4 Metals Cr (0.062 mg/L), Ni (0.11 mg/L), and Zn (0.061), and tannins and lignins (1.7 mg/L), were detected in MW-4. No other constituents of concern were detected.

Well Elevations, Groundwater Flow Direction, and Gradient

During the week of June 26, 1995, the newly installed monitoring wells were surveyed by a California licensed surveyor for top of casing and ground surface elevations to the nearest 0.01 foot, and horizontal locations. Elevations were surveyed to a mean sea level (MSL) reference datum.

Based on surveyed elevations and water levels measured on June 27, 1995, groundwater elevations were determined, as shown in Table 2.

TABLE 2. GROUNDWATER ELEVATIONS (JUNE 27, 1995) (feet)

Well	Reference Elevation		Depth to Groundwater		Groundwater Elevation
	Ground Surface	Top of Casing	Below Ground Surface	Below Top of Casing	
MW-1	23.52	25.72	4.20	6.40	19.32
MW-2	22.42	25.07	3.75	6.40	18.67
MW-3[a]	21.19	23.48	9.26	11.55	11.93
MW-4	24.65	26.75	5.96	8.06	18.69
P-1[b]	25.40	27.20	8.48	10.68	16.92

a Monitors groundwater in a deeper aquifer.
b Piezometer currently monitored for groundwater elevations only.

Shallow, unconfined to semi-confined groundwater is present in the alluvial deposits. Based on groundwater elevations measured in wells MW-1, MW-2, MW-4, and piezometer P-1 on June 27, 1995, shallow groundwater beneath the site flows predominantly toward the southeast at an average gradient of 0.008. Confined groundwater is present in deeper alluvial deposits (encountered in well MW-3), and is separated from the shallow groundwater by low permeability silty clay and very clayey silt. Figure 3 presents groundwater contours derived from data acquired from measurements taken at MW-1, MW-2, MW-4, and P-1.

Disposition of Excavated Soil and Purge Water

Borehole soil cuttings and well development purge water from each well were placed separately in DOT approved 17 E/H 55 gallon steel drums and set adjacent to or near the corresponding well locations. The drums were labeled to indicate contents and a contact person. Based on the sample results, SHN proposes that the soil be spread on site for weathering exposure, and that the purge/development water be spread over the existing concrete mill slab for evaporation.

CONCLUSIONS

The following conclusions relative to project site groundwater character and quality are SHN's interpretation of data collected during field investigative work.

Three areas of concern, relative to soil and/or groundwater contamination with petroleum hydrocarbon substances have been documented. The fuel tank/septic tank area (fuel tank area/septic tank area), the vehicle maintenance area (vehicle maintenance area), and the log debarking facility are documented as areas of soil and/or groundwater contamination. For reference purposes, the term "Hazardous" is as defined by the California Code of Regulations Title 22, Chapter 11, (CCR-Title 22). Conditions of soil and groundwater contamination include, but are not limited to, the following:

1. Metals in the site groundwater are not hazardous and do not pose a health risk for potential potable water uses, if any.

2. MW-2 is the only monitoring well with detectable groundwater contamination (diesel, 74 ug/L). No other petroleum hydrocarbons, volatile organic compounds, or semi-volatile organic compounds were detected in the sampled wells.

3. Petroleum hydrocarbon soil contamination was detected at specific depths in MW-2, MW-3, and MW-4.

4. Elevated Pb (lead) levels were detected in upper soils at wells MW-2 and MW-3. The soil lead levels are not hazardous or regulated.

5. No volatile or semi-volatile organic compounds were detected in the soils at wells MW-3 and MW-4.

6. Shallow (1.75 feet), low level, total petroleum hydrocarbon (TPHIR, 82 ug/g) contamination was verified in the vehicle maintenance area at VM-1, but were not detected in the debarker area at DB-1. This scan was run to determine the potential presence of petroleum hydrocarbons, not necessarily found by the individual specific petroleum hydrocarbon analyses.

7. Tannins and lignins, while present in the groundwater at all wells, were expected due to the historical use of the site as a lumber mill.

EXPLANATION

℄ APPROXIMATE PROPERTY LINE

DRAINAGE DITCH

MW–1 GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95)

P–1 PIEZOMETER LOCATION AND DESIGNATION

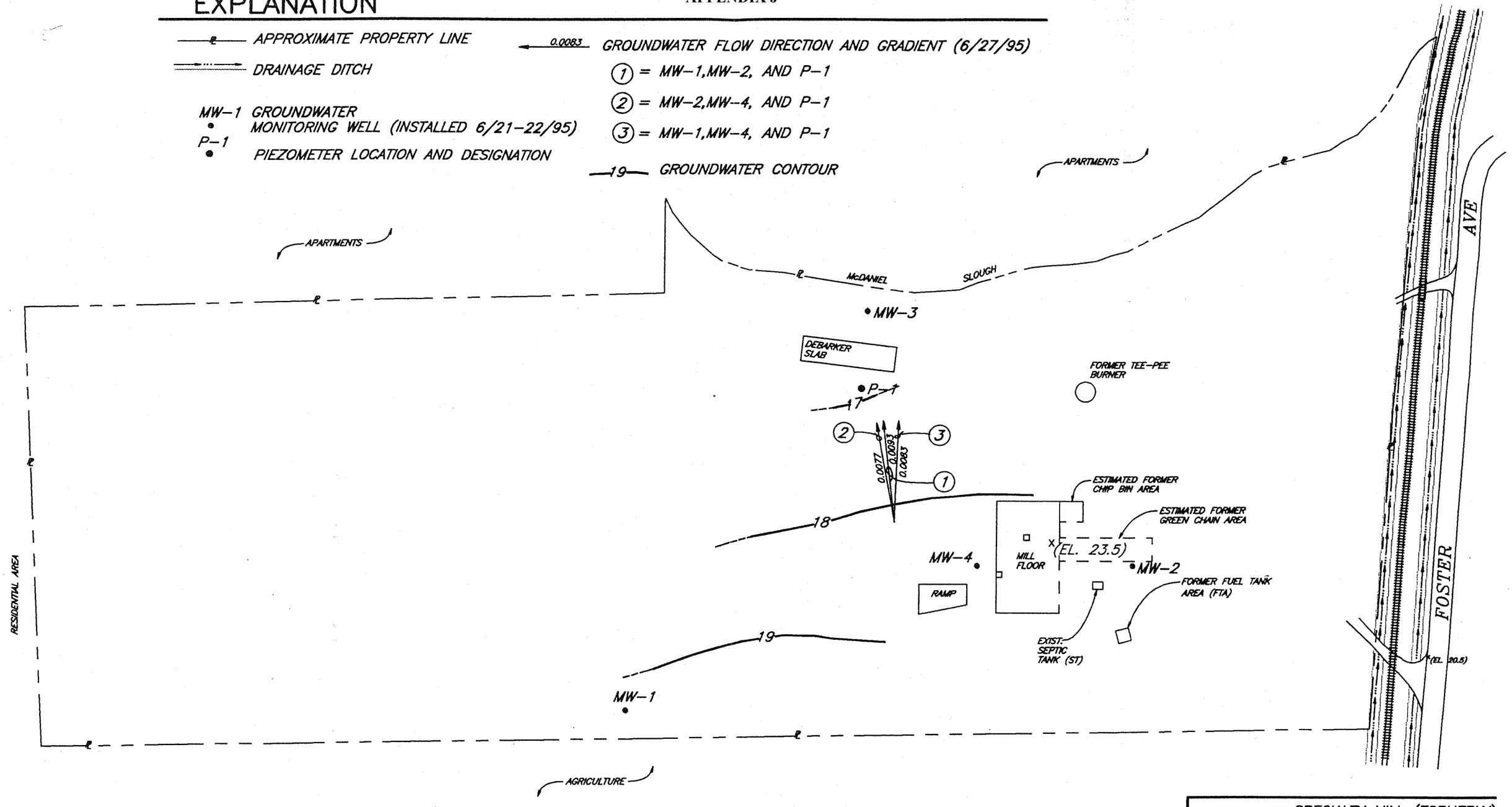
0.0083 GROUNDWATER FLOW DIRECTION AND GRADIENT (6/27/95)

(1) = MW–1, MW–2, AND P–1

(2) = MW–2, MW–4, AND P–1

(3) = MW–1, MW–4, AND P–1

19 GROUNDWATER CONTOUR



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER CONTOURS

SHN 930121.100
AUGUST, 1995

FIGURE 3

SHN

9--12i--

RECOMMENDATIONS

The general intent of these recommendations is to facilitate the ERS objective of selling the property, with the appropriate regulatory clearances, to allow a potential buyer to proceed with residential development.

Scheduling and implementation of any of the following recommendations will be the result of initial discussions between the HCDEH and ERS.

A. Schedule a meeting to discuss the findings presented in this report and to determine a course of action for further investigation and/or addressing remedial action alternatives relative to soil and groundwater contamination at the site.

B. Conduct three additional quarterly groundwater monitoring well sampling and groundwater level measuring events. This will complete characterization for one complete hydrologic cycle. Analyze the groundwater samples for TPHG, TPHD, TPHMO, metals (Cd, Cr, Ni, Pb, Zn), and tannins and lignins. Prepare a monitoring letter report for each event and submit to HCDEH. The final (4th quarter) monitoring report shall include a summary of findings, and recommendations for additional investigation, if any.

C. Consider additional groundwater investigation only after completion of soil remedial action, with review of the associated verification sampling results, and upon review of the annual groundwater monitoring data described in B.

D. Based on SHN's conclusion that the extent and characterization of soil contamination for the debarker, vehicle maintenance, and fuel tank areas is sufficient to finalize soil remedial action, ERS and SHN will present the HCDEH with a preferred remedial action plan after HCDEH has reviewed, and commented to ERS, on the findings of this initial groundwater investigation.

E. Conduct further investigation of soils in the septic tank/leachfield area for potential contamination with petroleum hydrocarbons, in the gasoline, diesel, and motor oil range, and the metals Cd, Cr, Ni, Pb, and Zn. A worst case sample from this area should also be analyzed for semi volatile compounds.

F. Discuss the collection of water and/or sediment samples from drainage ditches adjacent to the property as requested by the HCDEH in its letter of June 14, 1995, with HCDEH prior to initiating sampling of the ditch water or sediment. SHN suggests the discussion due to potential non mill operation impacts (railroad, Foster Avenue) to some of the ditches.

APPENDIX J

REFERENCES

California Regional Water Quality Control Board. (August 1990). Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks. Santa Rosa: RWQCB.

---. (February 24, 1992). "Appendix A," Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks. Santa Rosa: RWQCB.

SHN Consulting Engineers & Geologists, Inc. (June 1993). Phase I Environmental Site Assessment, 2000 Foster Avenue, Arcata, California, AP #505-161-11. (Prepared for North Coast Export Company. Eureka: SHN.

---. (January 1995). Initial Report of Findings for 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11 Formerly Specialty Mill. Eureka: SHN.

---. (May 1995). Work Plan for Hydrogeologic Investigations and Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Humboldt County AP# 505-161-11, Arcata, CA. Eureka: SHN.

APPENDIX A

CORRESPONDENCE AND WORK PLAN EXCERPT

HUMBOLDT COUNTY
DEPARTMENT OF HEALTH AND SOCIAL SERVICES
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET - SUITE 100 EUREKA, CALIFORNIA 95501 (707) 445-6215

14 June 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the May 1995 *Work Plan for Hydrogeologic Investigation and Remedial Action at the Former Specialty Mill Site* prepared by SHN Consulting Engineers and Geologists (SHN). I have reviewed the document and have the following comments.

Hydrogeologic Investigation

The proposed hydrogeologic investigation appears generally adequate for this phase of the investigation. This phase of the investigation may be implemented with the following understandings.

- All soil and groundwater samples should be analyzed for BTX&E, TPH as Motor Oil, semi-volatile compounds by EPA Method 8270 and TPHIR in addition to the proposed sampling plan.
- Soil cuttings should be stored in D.O.T. approved drums appropriately labeled to show contents and origin as opposed to Stockpiled on plastic. Drums should be kept secure from public access.
- Soil samples for laboratory analysis need to be obtained brass liners mounted in the drive sampler to prevent loss of volatiles.
- Water (or sediment samples, if water is not present) should be collected from the drainages adjacent to the property.
- The report of findings should be submitted within 60 days after completion of field installations. The report should include a proposed groundwater monitoring program.

Soil Remedial Action Plan

I have reviewed the soil remedial action plan portion of the workplan. The extent of contamination has not yet been identified. It is not appropriate to consider a remedial action prior to determining the contamination extent. The following areas need further definition prior to selection of a remedial alternative.

- The area east of the debarker slab.

- The vehicle maintenance area, including identification of large single peaks in the motor oil range noted by the laboratory.

- The former fuel tank area and the area south and east of the green chain.

I will be pleased to meet with you and or your consultant to discuss further work at the site prior to selection of a remedial option.

I look forward to receiving the report findings and working with you in this matter. Please call me at 707.441.5690, if you have any questions or would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.002

HUMBOLDT COUNTY
DEPARTMENT OF HEALTH AND SOCIAL SERVICES
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET - SUITE 100 EUREKA, CALIFORNIA 95501 (707) 445-6215

March 8, 1995

CERTIFIED MAIL
Z 351 955 858

Eel River Sawmills, Inc.
Attn: Dennis Scott
1053 Northwestern Avenue
Fortuna CA 95540

Subject: Soil / Groundwater Contamination, Eel River Sawmills, Inc. Specialty Mill
2000 Foster Avenue, Arcata, CA LOP Case #12518

Dear Mr. Scott:

Laboratory analysis indicates the presence of petroleum contaminated soil or groundwater at, or adjacent to, the above referenced underground storage tank facility. This contamination may be a result of a spill or leakage from one or more underground storage tanks at the facility. Accordingly, an unauthorized release report is required to be filed with this department within five (5) working days of discovery (California Code of Regulations, section 2652).

Please complete and sign the enclosed *Underground Storage Tank Unauthorized Release (Leak)/ Contamination Site Report* as completely as possible and return all but the last copy to this department.

The subject underground storage tank facility is of a category which is under the jurisdiction of the Local Underground Storage Tank Cleanup Oversight Program administered by the Humboldt County Health Department under contract with the State Water Resources Control Board.

The possible levels of contamination present in the soil indicates that further assessment will be needed to determine the threat and/or impact to groundwater. Enclosed for your information and use is a copy of the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tanks* (Tri-Regional Recommendations). This document describes the necessary work to investigate releases from underground tanks.

Specifically, you will need to submit, as soon as possible, all current information on the underground tank

removal/sampling. You will also need to review the initial soil or water sample results to determine if:

a. Water in the excavation has any level of contamination;

OR

b. Soil samples were contaminated with levels of petroleum hydrocarbons in excess of 100 parts per million (ppm).

If either of these conditions were present, then a hydrogeologic assessment will be needed to determine the threat and/or impact to groundwater. A workplan prepared by a California registered engineer or geologist will be needed.

However, if there were no detectable constituents in water and the initial soil samples were less than 100 ppm, then please review Table 3 and page 9 of the enclosed *Tri-Regional Recommendations* to determine whether a Case Number 2 evaluation is possible for your site. If so, please submit all the available information described in Table 3.

The required workplan or information will need to be submitted pursuant to Section 13267 of the California Water Code and be received by our office by **May 8, 1995.** Duplicate copies of all information must be submitted to the North Coast Regional Water Quality Control Board, 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

My staff and I look forward to working with you in this matter. Do not hesitate to contact Dale Dell'Osso at (707) 441-5690 if you have any questions.

Sincerely,

James W. Clark, R.E.H.S.
Administrative Representative

JWC:nh

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board

APPENDIX J

Reference: 930121.100

WORK PLAN FOR HYDROGEOLOGIC INVESTIGATION AND REMEDIAL ACTION AT THE FORMER SPECIALTY MILL SITE 2000 FOSTER AVENUE, HUMBOLDT COUNTY AP#505-161-11, ARCATA, CA

Prepared for:
Eel River Sawmills, Inc.

Prepared by

SHN
CONSULTING ENGINEERS & GEOLOGISTS
812 W. Wabash
Eureka, CA 95501
707/441-8855

May 1995

QA/QC:JLA JLA

L:\930121\WORKPLAN

APPENDIX J

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INTRODUCTION

On behalf of Eel River Sawmills, Inc. (ERS), SHN Consulting Engineers & Geologists (SHN) has prepared this work plan for a hydrogeologic investigation at the former Specialty Mill site, located at 2000 Foster Avenue, Humboldt County Assessor's Parcel Number (AP#) 505-161-11, Arcata, California (See Figure 1). The proposed hydrogeologic investigation includes borehole drilling and soil sampling, groundwater monitoring well installation and initial groundwater sampling, and groundwater elevation monitoring. The proposed subsurface investigation to further assess the source, degree, and extent of on site soil and groundwater contamination detected at the site during previous subsurface investigations (February and May 1994), is required by the Humboldt County Environmental Health Department (HCEHD) in the HCEHD's March 8, 1995, letter to ERS (Appendix A), and was discussed during the March 8, 1995, meeting between Mr. Dennis Scott of ERS, Mr. Dale Dell'Osso of HCEHD, and Mr. Marty Lay of SHN. The HCEHD has also required that duplicate copies of all information gathered at the site be submitted to the California Regional Water Quality Control Board, North Coast Region (RWQCB).

BACKGROUND

Site Location

The approximately 17 acre project site is located northwest of the City of Arcata, California, in the northwest 1/4 of Section 29, Township 6 north, Range 1 east, Humboldt Base and Meridian. The site is located at 2000 Foster Avenue, adjacent to the Arcata City limits, in an unincorporated area of Humboldt County. It is legally delineated as Humboldt County Assessor's parcel number 505-161-11 (See Figure 1). The project site is situated at an elevation of approximately 20 to 25 feet above mean sea level, in the relatively flat alluvial plain of the Mad River referred to as the Arcata Bottoms. The Arcata Bottoms area gently slopes down in a westward direction.

Surface waters closest to the project sites are McDaniel Slough (Janes Creek) located on the eastern boundary of the project site and Liscom Slough located approximately 0.75 of mile west of the project site (Figure 1). Local surface drainage for the project site is to the southwest, and the site is relatively flat with a general slope of less than 1 percent. An earthen ditch on the north side of the railroad tracks conveys drainage to the east, where it is received into the waters of McDaniel Slough/Janes Creek (Figure 2).

Site History

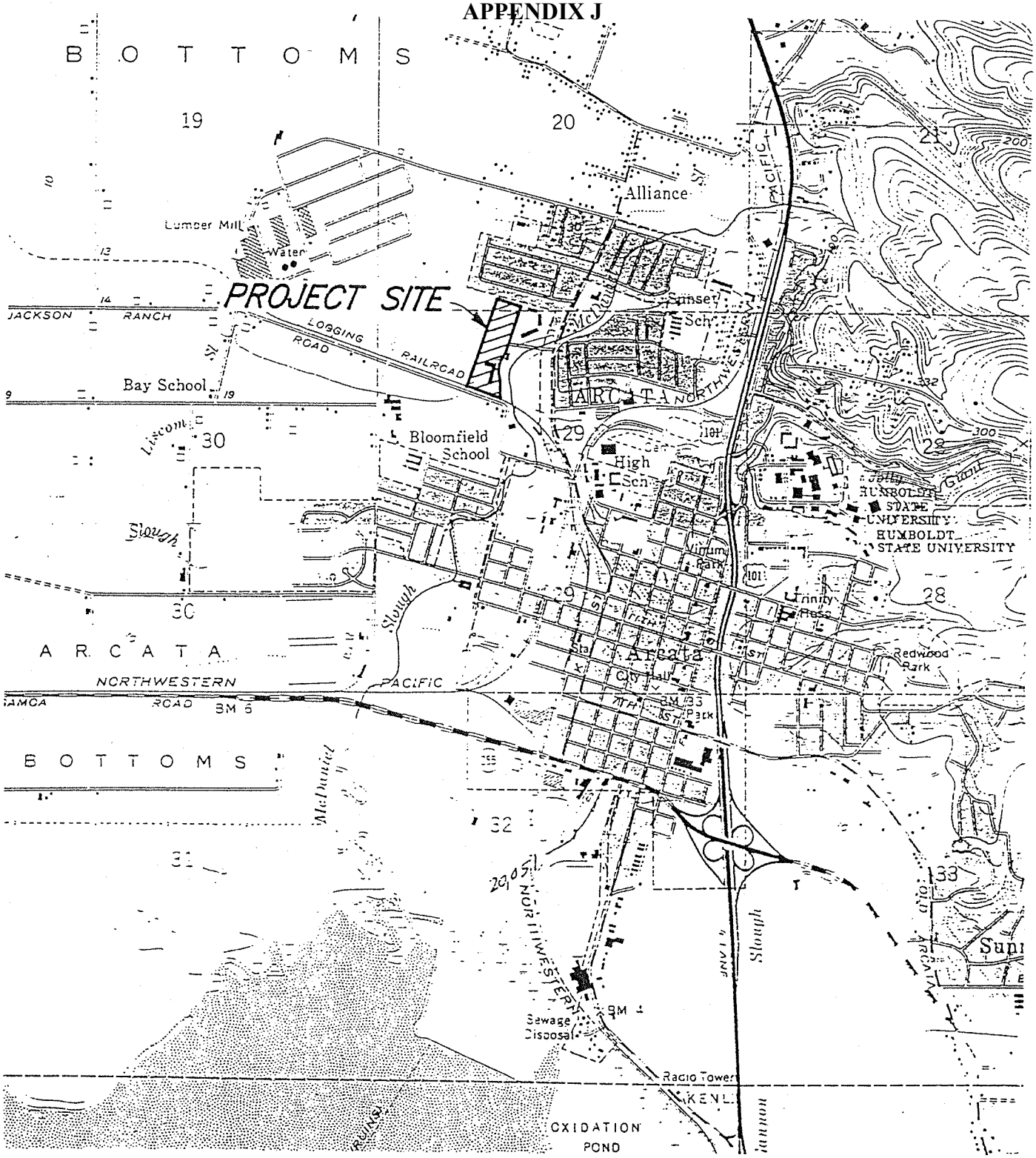
Historical use of the property, until 1950, was open space, undeveloped land, and reportedly pasture at times. A old growth redwood lumber mill was constructed on the site in 1951, and the mill, through various owners and changes in milling operations, continued operation until 1986 (most recently as Specialty Mill). The mill structures were then dismantled and the equipment was liquidated. Remnants of the mill operations existing on site at present include concrete slab foundations for the sawmill, log debarker, and mill loading ramps. Additionally, the northern half of the site is characteristic of long used log deck area with rocked loading corridors and wood debris laden deck areas. No site development has been conducted since the mill dismantling operations.

Previous Investigations

Phase I Environmental Site Assessment. Formerly operated by several owners, as a lumber producing sawmill, the abandoned, non operational site is being considered for liquidation by its current owner, ERS. SHN conducted a Phase I Environmental Site Assessment (ESA), for the property in June 1993. Information gathered during the ESA indicated that no wood preservatives of any kind were used at the site, and sources of potentially adverse soil and/or groundwater contamination (if any), were a result of the handling of petrochemical products used during mill operations. Petrochemical substances associated with the mill operations include diesel and gasoline fuels, and greases, motor oils, hydraulic fluids, and solvents for equipment operation, maintenance, and repair. Heavy metals associated with used motor oils, gasoline fuels, and solvent used in cleaning mechanical equipment include cadmium (Cd), chromium (Cr), lead (Pb), nickel (Ni), and zinc (Zn).

Phase II Site Investigation (February and May 1994). Pursuant to recommendations in the ESA, ERS authorized SHN to proceed with limited, initial Phase II subsurface soils and groundwater field investigation, to determine the relative extent and types of contamination, if any. Phase II investigation field work was conducted by SHN in February and May of 1994.

Based on the Phase II investigation findings, historic lumber milling operations at the site have, at specific locations, impacted the site soils and potentially the upper groundwater. Analytical results from February and May 1994 field investigations (soil and groundwater samplings), have indicated minor to moderate petrochemical contamination of the soil and groundwater. No wood preservatives of any type were reported or indicated to have been used at the site, and no volatile organic compounds have been detected in soil or groundwater samples.



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA

VICINITY MAP

SHN 930121.100
MAY, 1995
FIGURE 1

Specific areas of documented soil contamination include the historic fuel tank area (FTA), the vehicle maintenance area (VM), the debarker area (DB), isolated areas of the old log deck (DA), the mill leachfield area (LF), and isolated general site areas. The FTA, DB, and VM areas indicate soil contamination (petrochemical) sufficient to warrant remedial action. Groundwater characterization initially indicates potential petrochemical contamination associated with those specific areas.

Groundwater Elevations and Flow Direction (May 1994). Based on the stabilized groundwater elevations measured in temporary piezometers BH-1, BH-2, BH-3, and BH-4, the groundwater flow direction on May 18, 1994, was toward the east-southeast (toward McDaniel Slough), at a gradient of approximately 0.0103.

Cumulative Analytical Results. A summary of project-to-date analytical results of soil and groundwater sampling conducted by SHN is presented in Table 1 (follows Page 4). State certified North Coast Laboratories, Ltd., in Arcata, California, conducted the analytical testing for all groundwater and soil samples collected by SHN. Three areas of concern, relative to potential soil and/or groundwater contamination with petroleum hydrocarbon substances, have been documented. Historic mill operations associated with the fuel tank area (FTA), the vehicle maintenance area (VM), and the log debarking (DB) facility are documented as suspected areas of soil and/or groundwater contamination.

WORK PLAN FOR HYDROGEOLOGIC INVESTIGATION

Drilling and Well Installation

To further assess the source, degree, and extent of contamination in the soil and/or groundwater resulting from a potential release from specific areas of concern at the site, SHN proposes to drill four boreholes, install groundwater monitoring wells in the four boreholes, collect soil and groundwater samples, and measure groundwater elevations in the monitoring wells. Proposed borehole/monitoring well locations and designations are described below and shown on Figure 2.

MW-1. Background monitoring well located along the eastern property boundary, upgradient of the former active areas of the mill and the areas of concern. This location was proposed as a representative, upgradient, on site position for monitoring background water quality.

MW-2. Downgradient of the former Fuel Tank Area (FTA), to determine if contamination from the FTA has contributed to soil/and or groundwater contamination at the site.

MW-3. Downgradient of the former Debarker Area (DB), to determine if former activity in the DB area has contributed to soil/and or groundwater contamination at the site.

MW-4. Downgradient of the former Vehicle Maintenance Area (VM), to determine if former activity at the VM area has contributed to soil/and or groundwater contamination at the site.

Boreholes. Boreholes will be drilled using a conventional truck mounted drill rig, equipped with 8-inch diameter augers. Based on conditions encountered during previous subsurface investigations, boreholes will be up to approximately 8 feet in depth for soil sampling purposes, and up to approximately 12 feet in depth for groundwater monitoring well installation. The total depth of the boreholes will depend on the actual depth to groundwater (anticipated to be encountered between 4 and 8 feet below ground surface). Soil samples will be collected at approximately five foot intervals, areas of obvious contamination, pronounced changes in soil type, and the unsaturated soil just above the groundwater surface. Based on the anticipated shallow depth to groundwater, it is estimated that 1 to 2 soil samples will be collected from each borehole.

Soil encountered in the boreholes will be logged in accordance with the Unified Soil Classification System (USCS).

Monitoring Wells. The four boreholes will be converted to monitoring wells.

Installation. The monitoring wells will be cased with flush-threaded, 2 inch inside diameter, Schedule 40, polyvinyl chloride (PVC) risers and 0.010 inch machine slotted screens. Number 2/16 (or equivalent texture) sand will be used for the filter pack. Based on the conditions encountered during previous subsurface investigations, the selected screen size and filter pack size are compatible with the aquifer soil texture. A bentonite pellet seal will be placed on top of the filter pack, and charged with distilled water. The remaining annulus will be backfilled with Type I-II Portland cement with 5% bentonite grout (to prevent shrinkage away from the casing) from the top of the bentonite seal to the ground surface. A minimum 4 inch thick, concrete mix surface seal, will be placed around the well, and sloped away from the well to promote drainage. Each well will be completed above grade with a lockable, steel well monument. Typical monitoring well construction is shown on Figure 3.

Screen interval depth, and depth to the bentonite seal will depend on the depth to anticipated groundwater, seasonal variations, and conditions encountered in the field.

Development. No sooner than 48 hours after the placement of grout seals, the monitoring wells will be developed by surge and purge techniques. A "Well Wizard" air displacement purge pump will most likely be used to develop wells, until reasonably clear water is discharged.

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl-benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-FTA1	2.0	02/17/94	500 (a)	--	19 (e)	--	<0.03	<0.03	<0.03	<0.03	--	--	--	--	--	12
TP-FTA1	5.0	02/17/94	250 (a)	--	220 (e)	--	<0.5 (g)	<0.5 (g)	<0.5 (g)	<0.5 (g)	--	--	--	--	--	8.0
TP-ST	2.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	82	98	61	8.4
TP-ST	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	99 (i)	110	62	9.1
TP-VM4	2.0	02/17/94	--	140 (h)	--	82	--	--	--	--	--	<1.0	25	29	38	20
TP-VM4	4.0	02/17/94	--	<10	--	50	--	--	--	--	--	<1.0	76	88	74	9.7
TP-DBW	2.0	02/17/94	--	130 (h)	--	82	--	--	--	--	--	<1.0	25	28	30	4.8
TP-DBW	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	80	87	58	6.4
TP-DBE	2.0	02/17/94	--	--	--	58	--	--	--	--	--	<1.0	22	45	270	51
TP-DA1	2.0	02/17/94	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
TP-DA2	2.0	02/17/94	--	--	--	95	--	--	--	--	--	--	--	--	--	--
TP-1	1.5	05/17/94	19 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	50 (f)
TP-1 (DUPE)	1.5	05/17/94	--	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	29 (f)
TP-1	4.0	05/17/94	16 (a)	--	3.6 (e)	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	7.6
TP-2	1.0	05/17/94	1.9 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	14
TP-2	4.0	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.0
TP-3	1.0	05/17/94	160 (d)	--	19	--	<0.005	<0.005	<0.10 (g)	<0.10 (g)	--	--	--	--	--	5.3
TP-3	3.2	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	10
TP-3	4.5	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.1
TP-4	2.0	05/17/94	8.5 (d)	200	--	--	--	--	--	--	--	--	--	--	--	--
TP-4	4.5	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	1.3	05/17/94	41 (d)	510	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	4.4	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX J

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-6	1.7	05/17/94	24 (d)	150	--	--	--	--	--	--	--	--	--	--	--	--
TP-6 (DUPE)	1.7	05/17/94	5.6	48	--	--	--	--	--	--	--	--	--	--	--	--
TP-6	4.3	05/17/94	49 (d)	820	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	1.2	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	4.9	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	2.7	05/17/94	280 (d)	3400	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	4.5	05/17/94	270 (d)	1700	<1.0	--	<0.050	<0.050	<0.050	<0.025	<0.050	--	--	--	--	--
TP-9	1.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	10
TP-9	4.8	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	6.4
TP-10	1.1	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-10	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	4.3	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	2.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	4.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	1.4	05/18/94	<5.0	210	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	1.7	05/18/94	17 (d)	160	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	4.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX J

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH NOVEMBER 1994, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-17	1.1	05/18/94	3.0 (d)	35	--	--	--	--	--	--	--	--	--	--	--	--
TP-17 (DUPE)	1.1	05/18/94	3.2 (d)	28	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	3.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
Groundwater Samples			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
BH-1		05/18/94	67 (b)	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.043
BH-2		05/18/94	<50	<500	--	--	--	--	--	--	--	<0.010	0.047	0.077	0.031	<0.020
BH-3		05/18/94	480 (c)	1800	<50	--	<1.0	<1.0	<1.0	<0.50	<1.0	<0.010	0.023	0.034	<0.020	<0.020
BH-4		05/18/94	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--

-- = Not tested

TPHIR = Total Petroleum Hydrocarbons, analyzed using infrared spectrophotometry

** EPA 8010/8020 was the method used for the soil samples, EPA 601/602 was the method used for the water samples.*

DUPE = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesl. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In the labs judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The result reported represents the amount of material in the gasoline range only.

(f) Due to the high level of lead present, this sample and its duplicate sample were analyzed by EPA 6010. The difference in the lead results may be due to sample non-homogeneity.

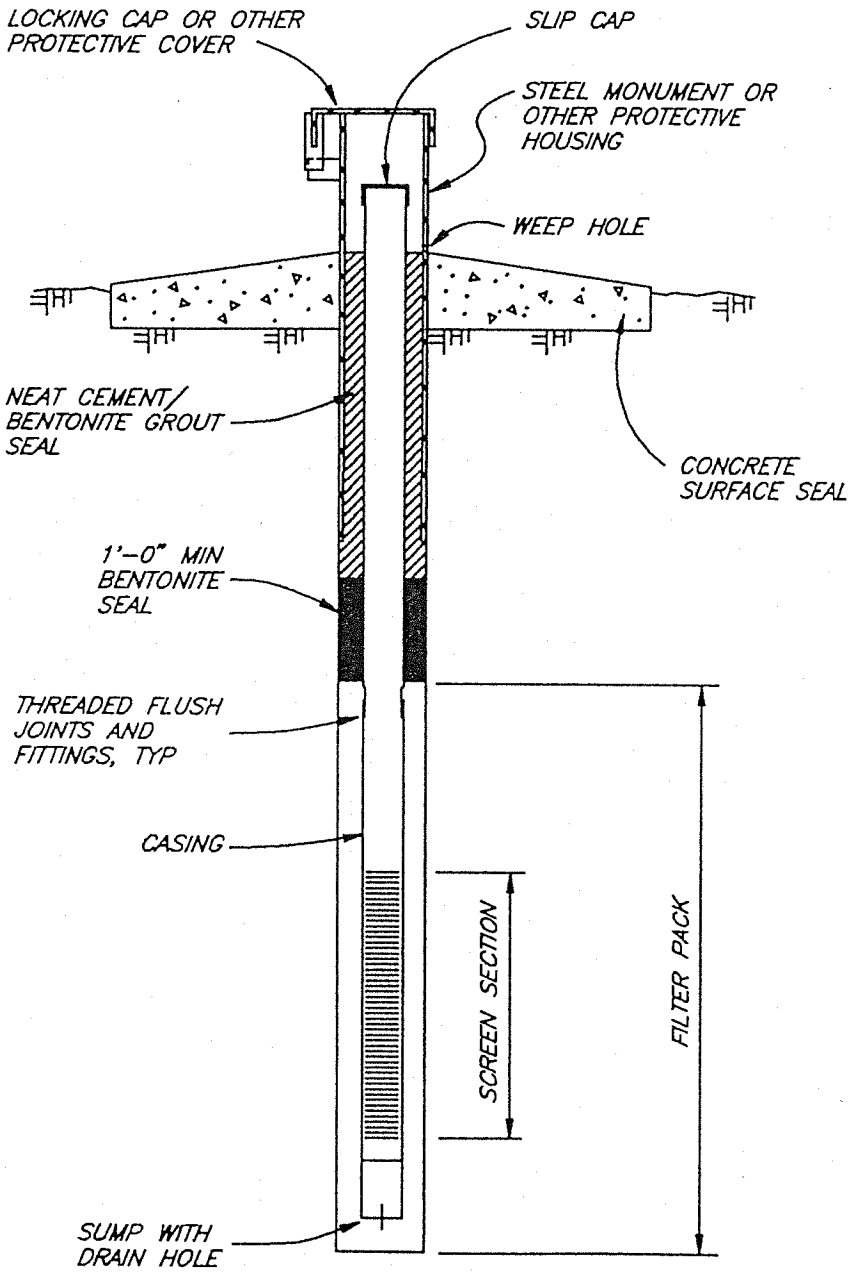
(g) The detection limits were raised due to matrix interference.

(h) Sample contains large individual peaks in the motor oil range, in addition to the motor oil present. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

(i) The sample from TP-ST at 5.0' was also tested for Soluble Chromium, the result was 0.56 mg/L. The Soluble Threshold Limit Concentration (STLC) for Chromium = 5.0 mg/L.

APPENDIX J

APPENDIX J



SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA

TYPICAL ABOVE GRADE MONITORING WELL

SHN 930121.100
MAY, 1995

Groundwater Elevation Monitoring. During the hydrogeologic investigation described in this work plan, stabilized groundwater elevations in the monitoring wells will be measured after well development and just before the proposed submittal of the draft hydrogeologic investigation report. The long term frequency and duration of groundwater elevation monitoring will be presented in the recommendations of the hydrogeologic investigation report.

Soil and Groundwater Sampling and Analyses

Borehole Soil Sampling. Samples will be collected from continuous dry core barrel samples collected during auger advancement. Samples will be collected in 1 inch diameter by 3 inch long brass tubes provided by the laboratory. The ends of the soil sample tubes will be covered with Teflon® tape and plastic caps (provided by the laboratory) to provide an airtight seal.

Initial Groundwater Sampling. One initial round of groundwater sampling and testing will be performed on the newly installed monitoring wells. Prior to sampling each new monitoring well, a decontaminated air displacement pump, Teflon® bailer, or disposable bailer will be used to evacuate approximately three well volumes of water. If yield is low, samples will be collected after removing one well volume and allowing the water level to stabilize. A well volume is defined as the water in the well casing plus the water in the filter pack (assumed sand porosity of 35 percent). The pH and electrical conductivity will be measured periodically during the evacuation of water until readings have stabilized within 10 percent. (Measurements are considered to have stabilized when three or more consecutive measurements taken 5 minutes apart vary by less than 10 percent.) Samples will be collected by discharging water from a disposable bailer directly into appropriate, laboratory supplied containers.

Sample Handling and Analytical Methods. Each soil and groundwater sample will be labeled on site to show sample number, location, job number, date and time, and the sampling personnel. Samples will be stored on ice in closed chests from the time of collection until delivery to the laboratory. Each sample will be transported, under chain-of-custody, to California Department of Health Services certified North Coast Laboratories, Ltd. within 24 hours of collection.

Soil samples and initial groundwater samples will be collected from boreholes/wells MW-1, MW-2, MW-3, and MW-4. The sampling program for soil and initial groundwater sample is presented in Table 2, on the following page.

TABLE 2
SAMPLING PROGRAM FOR SOIL AND INITIAL GROUNDWATER SAMPLES

Constituent	MW-1		MW-2		MW-3		MW-4	
	Soil[a]	GW[b]	Soil[a]	GW[b]	Soil[a]	GW[b]	Soil[a]	GW[b]
TPHG[c]	X	X	X	X	X	X		
TPHD[d]	X	X	X	X	X	X	X	X
TPHMO[e]					X	X	X	X
BTEX[f]	X	X	X	X	X	X		
Cadmium	X	X			X	X	X	X
Chromium	X	X			X	X	X	X
Lead	X	X	X	X	X	X	X	X
Nickel	X	X			X	X	X	X
Zinc	X	X			X	X	X	X
Tannins & Lignins		X		X		X		X

a Quantity of soil samples collected from the borehole will be dependent upon conditions encountered in the field.
b Groundwater
c Total Petroleum Hydrocarbons as gasoline (TPHG)
d TPH as diesel (TPHD)
e TPH as motor oil (TPHMO)
f Purgeable aromatics (includes benzene, toluene, ethylbenzene, and xylenes [BTEX]) by EPA Method 8020

Quality Control and Quality Assurance Measures. During sampling, a "blind," duplicate, groundwater sample will be collected to check the reproducibility of the laboratory results. Field quality control procedures will include the analysis of a trip blank to ascertain that no contamination is introduced to the samples from the field.

Samples submitted for laboratory analyses will be accompanied by chain-of-custody documentation. Samples will be stored on ice, in closed chests, from the time of collection until delivery to the laboratory, where they will be inspected for temperature and container condition, before analysis.

Decontamination Procedures. To prevent cross contamination between samples, all down hole drilling and sampling equipment will be steam cleaned before and between each borehole location. Sampling tools will be washed with distilled water and laboratory grade detergent, and rinsed with distilled water. Sample handling will take place on a clean, dry surface. Disposable gloves will be worn, and changed between handling of each sample. Rinseate from decontamination will be stored in 55 gallon drums, labeled, and secured as described in the "Containerization of Soil Cuttings and Purge Water" section, below.

Containerization of Purge Water and Stockpiling of Soil Cuttings

Soil cuttings from the boreholes will be stockpiled on and covered with sheet plastic adjacent to the borehole location. Purge water from well development and groundwater sampling and rinseate from decontamination will be contained in 55 gallon steel drums, and stored in a secure location on the project site. Each drum will be labelled appropriately, identifying the drum as containing potentially hazardous materials. These labels describe the type of material stored (water), the source of the material, and people to contact for information. Stockpiled soil and containerized water will be stored at the site pending the results of laboratory analyses. When the results of the laboratory analyses are received, decisions can be made regarding the proper disposal of the soil and water.

Well Elevations

The newly installed wells will be surveyed for top of PVC casing and ground surface elevations, and referenced to a permanent benchmark. Elevations will be surveyed to the nearest 0.01 foot by a California licensed surveyor. Well casings will be notched, and subsequent water level readings will be measured to the top of the PVC casing.

Report of Findings

A report of findings will be prepared to document the results of the hydrogeologic investigation, and to present conclusions and recommendations for additional investigation, if warranted.

Site Safety Plan

An updated Site Safety Plan (SSP) for the site is provided as Appendix B. The SSP details the health and safety procedures to be followed during the subsurface investigation work associated with drilling, monitoring well installation, and soil and groundwater sampling fieldwork. Site safety briefings will be conducted daily during the sampling fieldwork, and will involve SHN staff, subcontractors, and any other on-site personnel.

WORK PLAN FOR REMEDIAL ACTION

General Objective

Selection of alternatives for remedial action, relative to documented soil contamination and as yet unconfirmed groundwater contamination, is being driven by the ultimate goal of residential development occupying the major portion of the subject property. Cleanup levels for contaminated soils, and groundwater contamination, if any, will need to be assessed and established between the County and ERS so that the potential for residential site development is allowed to proceed in a timely and publicly safe manner.

APPENDIX B

SUMMARY OF LABORATORY RESULTS PROJECT TO DATE

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH JUNE 1995

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl-benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-FTA1	2.0	02/17/94	500 (a)	--	19 (e)	--	<0.03	<0.03	<0.03	<0.03	--	--	--	--	--	12
TP-FTA1	5.0	02/17/94	250 (a)	--	220 (e)	--	<0.5 (g)	<0.5 (g)	<0.5 (g)	<0.5 (g)	--	--	--	--	--	8.0
TP-ST	2.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	82	98	61	8.4
TP-ST	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	99 (i)	110	62	9.1
TP-VM4	2.0	02/17/94	--	140 (h)	--	82	--	--	--	--	--	<1.0	25	29	38	20
TP-VM4	4.0	02/17/94	--	<10	--	50	--	--	--	--	--	<1.0	76	88	74	9.7
TP-DBW	2.0	02/17/94	--	130 (h)	--	82	--	--	--	--	--	<1.0	25	28	30	4.8
TP-DBW	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	80	87	58	6.4
TP-DBE	2.0	02/17/94	--	--	--	58	--	--	--	--	--	<1.0	22	45	270	51
TP-DA1	2.0	02/17/94	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
TP-DA2	2.0	02/17/94	--	--	--	95	--	--	--	--	--	--	--	--	--	--
TP-1	1.5	05/17/94	19 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	50 (f)
TP-1 (DUPE)	1.5	05/17/94	--	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	29 (f)
TP-1	4.0	05/17/94	16 (a)	--	3.6 (e)	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	7.6
TP-2	1.0	05/17/94	1.9 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	14
TP-2	4.0	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.0
TP-3	1.0	05/17/94	160 (d)	--	19	--	<0.005	<0.005	<0.10 (g)	<0.10 (g)	--	--	--	--	--	5.3
TP-3	3.2	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	10
TP-3	4.5	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.1
TP-4	2.0	05/17/94	8.5 (d)	200	--	--	--	--	--	--	--	--	--	--	--	--
TP-4	4.5	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	1.3	05/17/94	41 (d)	510	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	4.4	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-6	1.7	05/17/94	24 (d)	150	--	--	--	--	--	--	--	--	--	--	--	--
TP-6 (DUPE)	1.7	05/17/94	5.6	48	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX J

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH JUNE 1995, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-6	4.3	05/17/94	49 (d)	820	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	1.2	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	4.9	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	2.7	05/17/94	280 (d)	3400	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	4.5	05/17/94	270 (d)	1700	<1.0	--	<0.050	<0.050	<0.050	<0.025	<0.050	--	--	--	--	--
TP-9	1.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	10
TP-9	4.8	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	6.4
TP-10	1.1	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-10	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	4.3	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	2.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	4.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	1.4	05/18/94	<5.0	210	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	1.7	05/18/94	17 (d)	160	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	4.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	1.1	05/18/94	3.0 (d)	35	--	--	--	--	--	--	--	--	--	--	--	--
TP-17 (DUPE)	1.1	05/18/94	3.2 (d)	28	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	3.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX J

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH JUNE 1995, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	**8270	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MW-1	1 - 1.5	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	1.5 - 2	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	0.5 - 1	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	51	62	60	11
MW-1	9.5 - 10	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	9 - 9.5	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8.5 - 9	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	72	83	77	10
MW-2	3.5 - 4	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-2	3 - 3.5	06/21/95	13 (b)	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2.5 - 3	06/21/95	--	--	--	--	--	--	--	--	--	--	--	--	--	18
MW-3	1.5 - 2	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	1 - 1.5	06/22/95	<1.0	24	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	0.5 - 1	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	27	30	65	22
MW-3	7 - 7.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	6.5 - 7	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6 - 6.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	79	110	65	9.5
MW-3	7.5 - 7.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
MW-3	8 - 8.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-3	17 - 17.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	16.5 - 17	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	16 - 16.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	88	110	71	11
MW-4	4.5 - 5	06/22/95	--	--	1.2 (j)	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-4	4 - 4.5	06/22/95	38 (a)	26	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5 - 5.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-4	3.5 - 4	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	74	90	74	10
MW-4	5.5 - 5.75	06/22/95	--	--	--	3600	--	--	--	--	--	--	--	--	--	--
VM-1	1.5	06/22/95	--	--	--	82	--	--	--	--	--	--	--	--	--	--
DB-1	1.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--

APPENDIX J

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH JUNE 1995, CONTINUED

Sample ID	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	**8270/ 8080	Benzene	Toluene	Ethyl Benzene	Xylenes	*601/ 602	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)	Tannin & Lignin
Groundwater Samples		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
BH-1	05/18/94	67 (b)	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.043	--
BH-2	05/18/94	<50	<500	--	--	--	--	--	--	--	<0.010	0.047	0.077	0.031	<0.020	--
BH-3	05/18/94	480 (c)	1800	<50	--	<1.0	<1.0	<1.0	<0.50	<1.0	<0.010	0.023	0.034	<0.020	<0.020	--
BH-4	05/18/94	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	06/28/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.022	0.052	0.03	<0.020	0.43
MW-2	06/29/94	74 (b)	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.036	1.1
MW-3	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3
MW-4	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.062	0.11	0.061	<0.020	1.7
MW-4 (QC-1)	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.066	0.11	0.057	<0.020	1.8

-- = Not tested

TPHIR = Total Petroleum Hydrocarbons, analyzed using infrared spectrophotometry

** For a full list of EPA 8010, 8020, 601 and 602 constituents, and detection limits see North Coast Laboratories results.*

*** For a full list of EPA 8270 and 8080 constituents, and detection limits see American Environmental Network Laboratories results.*

DUPE/ QC = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesl. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In the labs judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The result reported represents the amount of material in the gasoline range only.

(f) Due to the high level of lead present, this sample and its duplicate sample were analyzed by EPA 6010. The difference in the lead results may be due to sample non-homogeneity.

(g) The detection limits were ralsed due to matrix interference.

(h) Sample contains large individual peaks in the motor oil range, in addition to the motor oil present. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

(i) The sample from TP-ST at 5.0' was also tested for Soluble Chromium, the result was 0.56 mg/L. The Soluble Threshold Limit Concentration (STLC) for Chromium = 5.0 mg/L.

(j) Sample does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.

APPENDIX J

APPENDIX C

SUBSURFACE EXPLORATION LOGS

APPENDIX J

HOLE NUMBER MW-1

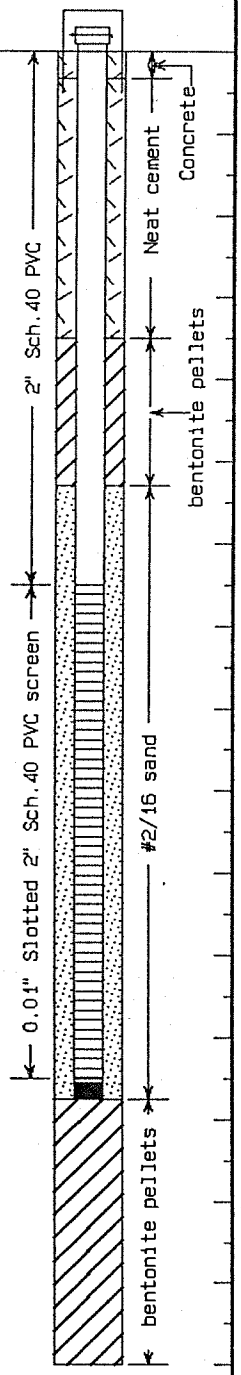
PROJECT ERS Specialty Mill
LOCATION Foster Avenue, Arcata
GROUND SURFACE ELEVATION 23.52 ft.MSL
EXCAVATION METHOD CME 750 Hollow Stem Auger
LOGGED BY JLA

JOB NUMBER 930121.100
DATE DRILLED 6/21/95
SAMPLER TYPE 2"x24" Split Spoon
TOTAL DEPTH OF HOLE 16.0 ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 IN.	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Begin sampling at approximately 3" below ground surface. Metals TPHMO/TPHD TPHG/BTEX	1		3/3" 6 7		ML	Surface: berry vines, roots. SILT, clayey, slightly sandy, soft, moist, dark gray, 10YR 4/1. Very fine sand.
	2		9 4			
	3		5 7			SILT, slightly clayey, slightly sandy, soft, very moist, dark grayish brown, 10YR 4/2. Trace roots and root holes. Very fine sand.
	4		7 2			
	5		4 4			
	6		6 4			
	7		6 7			
Metals TPHMO/TPHD TPHG/BTEX	8		3 6			SILT, clayey, sandy, soft, very moist to wet, dark grayish brown 10YR 4/2 to dark yellowish brown 10YR 4/4, variegated. Root holes. Very fine sand.
	9		8 10			
	10		3 7		SM	SAND, silty, medium dense, wet, dark grayish brown 2.5Y 4/2. Very fine grained sand. Occasional sedge stems, and roots. Iron staining dark yellowish brown 10YR 4/6.
	11		10 10			
	12		3 4		CL	CLAY, plastic, slightly silty, stiff, moist, dark gray N4.
	13		6 8			
	14		4 5			
	15		8 9			
	16					Bottom of boring at 14'. Sampled ahead of augers to 16.0'.

Top of Casing Elev: 25.72 ft.

WELL DIAGRAM



APPENDIX J

HOLE NUMBER MW-2

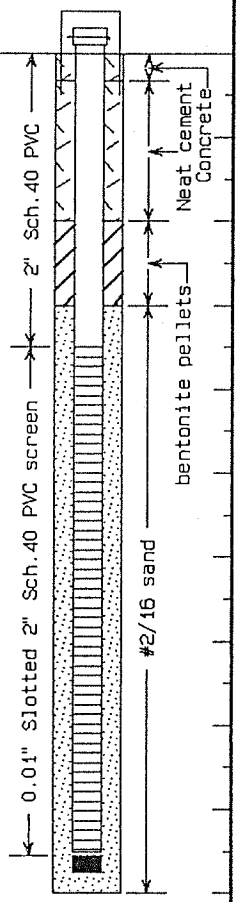
PROJECT ERS Specialty Mill
LOCATION Foster Avenue, Arcata
GROUND SURFACE ELEVATION 22.42 ft.MSL
EXCAVATION METHOD CME 750 Hollow Stem Auger
LOGGED BY JLA

JOB NUMBER 930121.100
DATE DRILLED 6/21/95
SAMPLER TYPE 2"x24" Split Spoon
TOTAL DEPTH OF HOLE 10.0 ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 IN.	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Begin sampling at approximately 3" below ground surface. Sampler blocked off, only first 6" retained.	1		20, 17, 14, 10			Surface: grass FILL, GRAVEL, SILT, dry to damp, roots, dense, grayish brown. Gravel, subrounded to 2-1/2" maximum dimension.
Lead TPHMO/TPHD TPHG/BTEX	2 3 4		5, 6, 8, 8, 3		ML	SILT, sandy, soft, moist, gray 10YR 5/1, and dark yellowish brown 10YR 4/4. Fine sand.
No sample recovery from 5 to 6' interval.	5 6		2, 2, 3, 2		SM	SAND, slightly silty, loose, wet, very dark gray N3. Fine to medium, subrounded, poorly graded sand.
	7		2, 3, 4, 4			SAND, silty, loose, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated. Fine to medium, poorly graded sand.
	8		2		ML	SILT, sandy, soft, wet, very dark gray N3, and dark yellowish brown, 10YR 4/4 variegated. Very fine and fine sand.
			2		SM	
	9		3, 4, 6		ML	SAND, silty, loose, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated. Fine to medium, poorly graded sand.
	10					SILT, sandy, soft, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated. Variegated fine and fine sand.
	11					SILT, stiff, moist, dark gray 5Y 4/1.
	12					Bottom of boring at 10.0'.
	13					
	14					
	15					
	16					

Top of Casing Elev: 25.07 ft.

WELL DIAGRAM



APPENDIX J

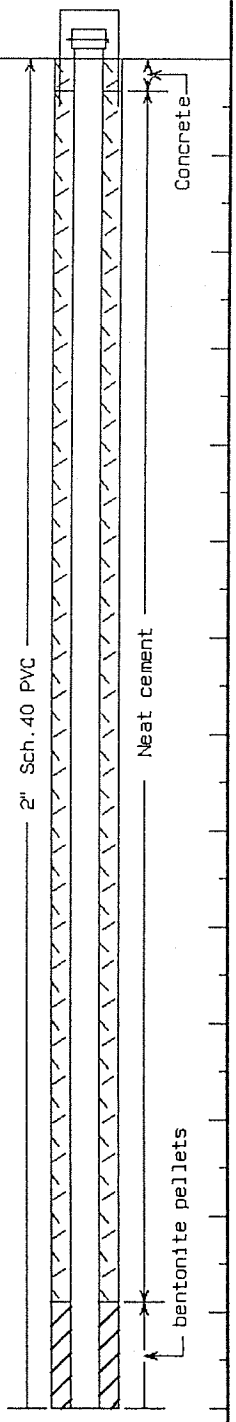
HOLE NUMBER MW-3

PROJECT ERS Specialty Mill
JOB NUMBER 930121.100
LOCATION Foster Avenue, Arcata
DATE DRILLED 6/22/95
GROUND SURFACE ELEVATION 21.185 ft.MSL
SAMPLER TYPE 2"x24" Split Spoon
EXCAVATION METHOD CME 750 Hollow Stem Auger
LOGGED BY JLA
TOTAL DEPTH OF HOLE 24.0 ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 IN.	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Begin sampling at approximately 3" below ground surface.			2			Surface: cleared berry vines, fill, silty, gravelly, cobbly, metal and concrete debris.
	1		2			
			4			FILL, silty, clayey, gravelly, loose, moist, very dark grayish brown 10YR 3/2.
			7			
	2		16			FILL, silty, sandy, medium stiff, moist, very dark grayish brown 10YR 3/2, rootlets and root holes common. Very fine to medium sand.
			15			
No sample recovery from 3 to 4' interval.	3		14		SM	FILL, silty, gravelly, sandy, stiff, moist, very dark grayish brown 10YR 3/2. Gravel to 1-1/2" maximum dimension.
			10			
	4		7			SAND, silty, dense, moist, brown 10YR 4/3. Fine sand.
			9			
No sample recovery from 5 to 6' interval	5		9			SAND, silty, clayey, dense, moist, gray 10YR 6/1, and yellowish brown 10YR 5/6 variegated. Fine to medium sand.
			12			
Metals	6		4			
TPHMO/TPHD			6			
TPHG/BTEX	7		7			
TPHIR (from shoe of sampler)			7			
EPA 8270	8		4		ML	SILT, clayey, stiff, moist, light gray 10YR 6/1, and yellowish brown 10YR 5/6 variegated.
			6		CL	
Potential permeability test	9		10			CLAY, silty, stiff, moist, gray 10YR 5/1, and yellowish brown 10YR 5/6. Common plant fragments and carbonized wood fragments to 1/4" maximum dimension.
			10			
	10		3			Becomes gray N5
			5			
Potential permeability test	11		8			
			9			
	12		3			
			6			
	13		9			
			10		ML	SILT, very clayey, stiff, moist, gray N5, common fine plant fragments, thin stems to 1" in length.
	14					

Top of Casing Elev: 23.475 ft.

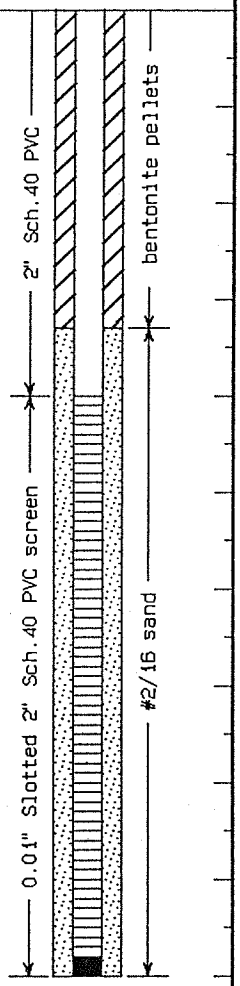
WELL DIAGRAM



HOLE NUMBER MW-3

PROJECT ERS Specialty Mill JOB NUMBER 930121.100

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 IN.	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	WELL DIAGRAM
	15		4, 6		ML	SILT, very clayey, stiff, moist, gray N5, common fine plant fragments, thin stems to 1" in length.	
			8, 11		CL	CLAY, silty, stiff, moist, gray N5, common plant fragments.	
Metals TPHMO/TPHD	16		1, 3				
TPHG/BTEX	17		6, 8				
	18		5, 7		SM	SAND, silty, clayey, dense, moist, gray N5. Trace plant fragments to 1/4" maximum dimension. Becomes wet - free water on grains and in pore spaces.	▽ 6/22/95
	19		10, 11				
	20		3, 6				
	21		8, 9			Increase in silt/clay content.	
	22		3, 5				
Water to 23.3' inside augers and coming up steadily (at 1205).	23		6, 8				▽ 6/22/95
	24					Bottom of boring at 24.0'	
	25						
	26						
	27						
	28						
	29						
	30						



APPENDIX J

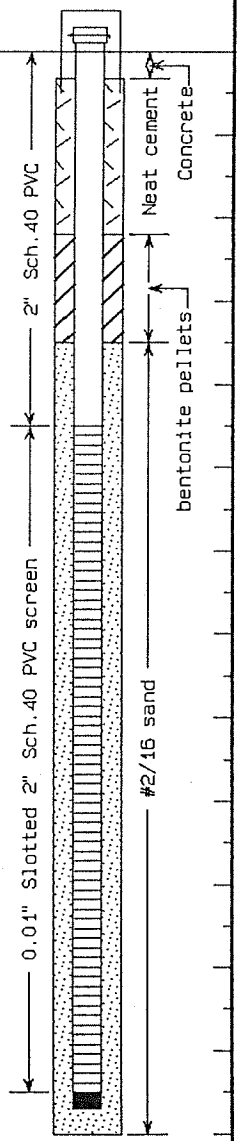
HOLE NUMBER MW-4

PROJECT ERS Specialty Mill
JOB NUMBER 930121.100
LOCATION Foster Avenue, Arcata
DATE DRILLED 6/21/95
GROUND SURFACE ELEVATION 24.65 ft.MSL
SAMPLER TYPE 2"x24" Split Spoon
EXCAVATION METHOD CME 750 Hollow Stem Auger
LOGGED BY JLA
TOTAL DEPTH OF HOLE 13.0 ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 IN.	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
Begin sampling at approximately 3" below ground surface.	1		7, 14, 14			Surface: grass, roots near surface. FILL, gravelly, sandy, silty, loose, to dense, moist to wet near surface (in shallow root zone). Gravel to 2-1/2" maximum dimension.
Sampler refusal at 2', drill to 3'. Sample from 3'.	2		27, 37/0			
	3		4		ML	SILT, sandy, soft, moist, very dark gray N3. Very fine sand.
Lead	4		7			
TPHMO/TPHD			8			
TPHG/BTEX			8			
8270	5		3		SM	SAND, very silty, loose, moist to wet at 5.75', very dark gray N3. Very fine to fine, poorly graded sand.
TPHIR			3			▽ 6/21/95 ▼ 6/27/95
	6		4			
			5			
	7		2		ML	SILT, sandy, soft, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated. Very fine sand.
	8		3			▽ 6/21/95
			3			
			4			
	9		2			
			3			SILT, sandy, medium soft, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated, carbonized wood fragments to 1/2" maximum dimension.
	10		6			
			8		SM	SAND, silty, medium soft, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated. Fine to medium, poorly graded sand.
	11		2			
			5			
	12		7		ML	SILT, sandy, medium soft, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated. Carbonized wood fragments to 1/2" maximum dimension.
			8		SM	SAND, silty, medium soft, wet, very dark gray N3, and dark yellowish brown 10YR 4/4 variegated. Fine to medium, poorly graded sand.
	13				ML	SILT, stiff, moist, very dark gray N3.
	14					Bottom of boring at 13.0'.
	15					
	16					

Top of Casing Elev: 26.75 ft.

WELL DIAGRAM



APPENDIX J

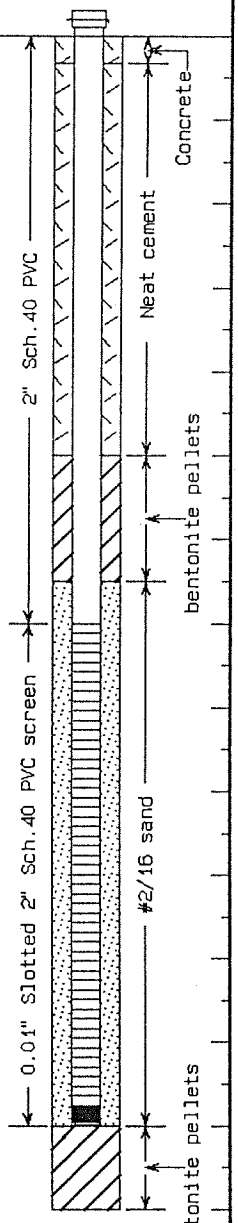
HOLE NUMBER P-1

PROJECT ERS Specialty Mill
JOB NUMBER 930121.100
LOCATION Foster Avenue, Arcata
DATE DRILLED 6/22/95
GROUND SURFACE ELEVATION 25.395 ft.MSL
SAMPLER TYPE 2"x24" Split Spoon
EXCAVATION METHOD CME 750 Hollow Stem Auger
LOGGED BY JLA
TOTAL DEPTH OF HOLE 14.0 ft.

REMARKS	DEPTH (ft.)	SAMPLES	BLOWS/6 IN.	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION
			25			Surface: grass, flowers.
	1		38			FILL, gravelly silty, sandy, dense, moist, gray and brown. Gravel, broken, angular, to 2-1/2" maximum dimension of sampler. Roots, plant debris from surface.
			17		ML	
No sample recovery from 1.5 to 2' interval	2		12			
			10			SILT, sandy, stiff, damp, very dark grayish brown 10YR 3/2. Occasional rounded gravel to 1/2" maximum dimension. Very fine sand, trace rootlets.
	3		12		SM	
			11			
	4		10			SAND, silty, dense, moist, dark gray 10YR 4/1. Very fine to fine, poorly graded sand, trace roots.
			4			
			5		SP	SAND, medium dense, moist, dark grayish brown 2.5Y 4/2. Subangular, poorly graded fine and medium sand.
	5		7			
No sample recovery from 6 to 8' interval.			7			
	6		10		ML	SILT, sandy, medium stiff, very moist, dark brown 10YR 3/3. Very fine and fine sand.
Pushed sampler back into hole to retrieve sample, but less than 3" recovered.			9			
	7		8			
			6			
	8		6			▽ 6/22/95 ▼ 6/27/95
			6		SM	SAND, silty, medium dense, wet, olive brown 2.5Y 4/3, and light olive brown 2.5Y 5/4, and yellowish brown 10YR 5/8 variegated. Trace carbonized wood fragments to 1/8" maximum dimesion. Very fine to medium sand.
No sample recovery from 9 to 10' interval	9		7			
			7			
	10		4			
			5		ML	SILT, sandy, medium stiff, wet, gray 10YR 5/1, and yellowish brown 10YR 5/8 variegated. Very fine and fine sand. Trace carbonized wood fragments to 1/4" maximum dimension.
	11		7			
			9		SM	
	12		4			SAND, silty, medium dense, wet, gray 10YR 5/1, and yellowish brown 10YR 5/8 variegated. Very fine and fine, poorly graded sand, subangular.
			8		ML	
	13		8			SILT, sandy, medium stiff, wet, gray 10YR 5/1, and yellowish brown 10YR 5/8 variegated. Very fine and fine sand. Trace carbonized wood fragments to 1/4" maximum dimension.
No sample recovery from 13.5 to 14' interval			8			
	14					SILT, clayey, stiff, very moist, gray N4. Common plant fragments to 1/4" maximum dimension. Piece of redwood bark 2.5" maximum dimension.
	15					Bottom of boring at 13.0'. Sampled ahead of augers to 14.0'.
	16					

Top of Casing Elev: 27.60 ft.

WELL DIAGRAM



APPENDIX D

LABORATORY ANALYSIS REPORTS

APPENDIX J

NORTH COAST LABORATORIES LTD.

DATE: July 10, 1995

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

ATTENTION: Dennis Scott

NCL: 95-06-412

ADDENDUM TO CHEMICAL EXAMINATION REPORT

PARAMETER	NOTATIONS
TPHC Diesel	Sample 03B contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. Sample 07B contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
TPHC Gasoline	Sample 07A does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

APPENDIX J

NORTH COAST LABORATORIES LTD.

Date: 07/10/95 REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 95-06-412

INVOICE # 60045651

Attn: Dennis Scott

WORK ID: 930121.100/Specialty Mill

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1 @ 1-1.5
01	MW-1 @ 1.5-2
01	MW-1 @ 0.5-1
02	MW-1 @ 9.5-10
02	MW-1 @ 9-9.5
02	MW-1 @ 8.5-9
03	MW-2 @ 3.5-4
03	MW-2 @ 3-3.5
03	MW-2 @ 2.5-3
04	MW-3 @ 1.5-2
04	MW-3 @ 1-1.5
04	MW-3 @ 0.5-1
05	MW-3 @ 7-7.5
05	MW-3 @ 6.5-7
05	MW-3 @ 6-6.5
05	MW-3 @ 7.5-7.75
06	MW-3 @ 17-17.5
06	MW-3 @ 16.5-17
06	MW-3 @ 16-16.5
07	MW-4 @ 4.5-5
07	MW-4 @ 4-4.5
07	MW-4 @ 3.5-4
07	MW-4 @ 5.5-5.75
08	VM-1 @ 1.5
09	DB-1 @ 1.75
10	Blank

Comments:

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX J

SAMPLE IDENTIFICATION

Fraction	Sample Description
11	Lab. Control Sample

APPENDIX J

SAMPLE ID: MW-1 @ 1-1.5 FRAC.: 01A COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	07/01/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Surrogate:					06/30/95	07/01/95	EPA 8020
1-chloro-4-fluorbenzene	94.3	N/A	% Rec	1.0	06/30/95	07/01/95	EPA 8020
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/30/95	07/01/95	EPA5030GCFID

SAMPLE ID: MW-1 @ 1.5-2 FRAC.: 01B COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID

SAMPLE ID: MW-1 @ 0.5-1 FRAC.: 01C COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
Cadmium	ND	1.0	mg/kg	1.0		07/07/95	EPA 6010
Chromium	51	2.0	mg/kg	1.0		07/07/95	EPA 6010
Nickel	62	5.0	mg/kg	1.0		07/07/95	EPA 6010
Zinc	60	5.0	mg/kg	1.0		07/07/95	EPA 6010
Lead	11	2.0	mg/kg	4.0		06/27/95	EPA 7421

SAMPLE ID: MW-1 @ 9.5-10 FRAC.: 02A COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	07/01/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Surrogate:					06/30/95	07/01/95	EPA 8020
1-chloro-4-fluorbenzene	94.7	N/A	% Rec	1.0	06/30/95	07/01/95	EPA 8020
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/30/95	07/01/95	EPA5030GCFID

SAMPLE ID: MW-1 @ 9-9.5 FRAC.: 02B COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID

SAMPLE ID: MW-1 @ 8.5-9 FRAC.: 02C COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
| Cadmium	ND	1.0	mg/kg	1.0		07/07/95	EPA 6010
| Chromium	72	2.0	mg/kg	1.0		07/07/95	EPA 6010
| Nickel	83	5.0	mg/kg	1.0		07/07/95	EPA 6010
| Zinc	77	5.0	mg/kg	1.0		07/07/95	EPA 6010
Lead	10	2.0	mg/kg	4.0		06/27/95	EPA 7421

SAMPLE ID: MW-2 @ 3.5-4 FRAC.: 03A COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	07/01/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Surrogate:					06/30/95	07/01/95	EPA 8020
1-chloro-4-fluorbenzene	88.3	N/A	% Rec	1.0	06/30/95	07/01/95	EPA 8020
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/30/95	07/01/95	EPA5030GCFID

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SAMPLE ID: MW-2 @ 3-3.5 FRAC.: 03B COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	13	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID

SAMPLE ID: MW-2 @ 2.5-3 FRAC.: 03C COLLECTED: 06/21/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	18	2.0	mg/kg	4.0		06/27/95	EPA 7421

SAMPLE ID: MW-3 @ 1.5-2 FRAC.: 04A COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	07/01/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Surrogate:					06/30/95	07/01/95	EPA 8020
1-chloro-4-fluorbenzene	92.5	N/A	% Rec	1.0	06/30/95	07/01/95	EPA 8020
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/30/95	07/01/95	EPA5030GCFID

SAMPLE ID: MW-3 @ 1-1.5 FRAC.: 04B COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	24	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID

SAMPLE ID: MW-3 @ 0.5-1 FRAC.: 04C COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
| Cadmium	ND	1.0	mg/kg	1.0		07/07/95	EPA 6010
| Chromium	27	2.0	mg/kg	1.0		07/07/95	EPA 6010

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
| Nickel	30	5.0	mg/kg	1.0		07/07/95	EPA 6010
| Zinc	65	5.0	mg/kg	1.0		07/07/95	EPA 6010
Lead	22	2.0	mg/kg	4.0		06/27/95	EPA 7421

SAMPLE ID: MW-3 @ 7-7.5 FRAC.: 05A COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	07/01/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Surrogate:					06/30/95	07/01/95	EPA 8020
1-chloro-4-fluorbenzene	90.7	N/A	% Rec	1.0	06/30/95	07/01/95	EPA 8020
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/30/95	07/01/95	EPA5030GCFID

SAMPLE ID: MW-3 @ 6.5-7 FRAC.: 05B COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID

SAMPLE ID: MW-3 @ 6-6.5 FRAC.: 05C COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
| Cadmium	ND	1.0	mg/kg	1.0		07/07/95	EPA 6010
| Chromium	79	2.0	mg/kg	1.0		07/07/95	EPA 6010
| Nickel	110	5.0	mg/kg	1.0		07/07/95	EPA 6010
| Zinc	65	5.0	mg/kg	1.0		07/07/95	EPA 6010
Lead	9.5	2.0	mg/kg	4.0		06/27/95	EPA 7421

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SAMPLE ID: MW-3 @ 7.5-7.75 FRAC.: 05D COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Total Petro. Hydrocarbons	ND	50	ug/g	1.0	06/28/95	06/28/95	SM5520-C,E,F

SAMPLE ID: MW-3 @ 17-17.5 FRAC.: 06A COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	07/01/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Surrogate:					06/30/95	07/01/95	EPA 8020
1-chloro-4-fluorbenzene	92.1	N/A	% Rec	1.0	06/30/95	07/01/95	EPA 8020
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/30/95	07/01/95	EPA5030GCFID

SAMPLE ID: MW-3 @ 16.5-17 FRAC.: 06B COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID

SAMPLE ID: MW-3 @ 16-16.5 FRAC.: 06C COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
| Cadmium	ND	1.0	mg/kg	1.0		07/07/95	EPA 6010
| Chromium	88	2.0	mg/kg	1.0		07/07/95	EPA 6010
| Nickel	110	5.0	mg/kg	1.0		07/07/95	EPA 6010
| Zinc	71	5.0	mg/kg	1.0		07/07/95	EPA 6010
Lead	11	2.0	mg/kg	4.0		06/27/95	EPA 7421

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SAMPLE ID: MW-4 @ 4.5-5 FRAC.: 07A COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	07/01/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	07/01/95	EPA 8020
Surrogate:					06/30/95	07/01/95	EPA 8020
1-chloro-4-fluorbenzene	95.1	N/A	% Rec	1.0	06/30/95	07/01/95	EPA 8020
TPHC Gasoline/soil	1.2	1.0	ug/g	1.0	06/30/95	07/01/95	EPA5030GCFID

SAMPLE ID: MW-4 @ 4-4.5 FRAC.: 07B COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	38	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	26	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID

SAMPLE ID: MW-4 @ 3.5-4 FRAC.: 07C COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
| Cadmium	ND	1.0	mg/kg	1.0		07/07/95	EPA 6010
| Chromium	74	2.0	mg/kg	1.0		07/07/95	EPA 6010
| Nickel	90	5.0	mg/kg	1.0		07/07/95	EPA 6010
| Zinc	74	5.0	mg/kg	1.0		07/07/95	EPA 6010
Lead	10	2.0	mg/kg	4.0		06/27/95	EPA 7421

SAMPLE ID: MW-4 @ 5.5-5.75 FRAC.: 07D COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Total Petro. Hydrocarbons	3600	500	ug/g	10	06/28/95	06/28/95	SM5520-C,E,F

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SAMPLE ID: VM-1 @ 1.5 FRAC.: 08A COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Total Petro. Hydrocarbons	82	50	ug/g	1.0	06/28/95	06/28/95	SM5520-C,E,F

SAMPLE ID: DB-1 @ 1.75 FRAC.: 09A COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Total Petro. Hydrocarbons	ND	50	ug/g	1.0	06/28/95	06/28/95	SM5520-C,E,F

SAMPLE ID: Blank FRAC.: 10A COLLECTED: N/A RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/30/95	06/30/95	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/30/95	06/30/95	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/30/95	06/30/95	EPA 8020
m,p Xylene	ND	0.010	ug/g	1.0	06/30/95	06/30/95	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/30/95	06/30/95	EPA 8020
Surrogate:					06/30/95	06/30/95	EPA 8020
1-chloro-4-fluorbenzene	93.3	N/A	% Rec	1.0	06/30/95	06/30/95	EPA 8020
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
Cadmium	ND	1.0	mg/kg	1.0		07/07/95	EPA 6010
Chromium	ND	2.0	mg/kg	1.0		07/07/95	EPA 6010
Nickel	ND	5.0	mg/kg	1.0		07/07/95	EPA 6010
Zinc	ND	5.0	mg/kg	1.0		07/07/95	EPA 6010
Lead	ND	2.0	mg/kg	4.0		06/27/95	EPA 7421
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/30/95	06/30/95	EPA5030GCFID
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/26/95	07/01/95	EPA3550GCFID
Total Petro. Hydrocarbons	ND	50	ug/g	1.0	06/28/95	06/28/95	SM5520-C,E,F

SAMPLE ID: Lab. Control Sample FRAC.: 11A COLLECTED: N/A RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
Benzene	115	N/A	% Rec	1.0	06/30/95	06/30/95	EPA 8020
Toluene	116	N/A	% Rec	1.0	06/30/95	06/30/95	EPA 8020

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PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Ethylbenzene	111	N/A	% Rec	1.0	06/30/95	06/30/95	EPA 8020
m,p Xylene	99.8	N/A	% Rec	1.0	06/30/95	06/30/95	EPA 8020
o Xylene	109	N/A	% Rec	1.0	06/30/95	06/30/95	EPA 8020
Surrogate:					06/30/95	06/30/95	EPA 8020
1-chloro-4-fluorbenzene	92.7	N/A	% Rec	1.0	06/30/95	06/30/95	EPA 8020
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010
| Cadmium	93.5	N/A	% Rec	1.0		07/07/95	EPA 6010
| Chromium	95.8	N/A	% Rec	1.0		07/07/95	EPA 6010
| Nickel	94.5	N/A	% Rec	1.0		07/07/95	EPA 6010
| Zinc	95.2	N/A	% Rec	1.0		07/07/95	EPA 6010
Lead	103	N/A	% Rec	4.0		06/27/95	EPA 7421
TPHC Gasoline/soil	99.4	N/A	% Rec	1.0	06/30/95	06/30/95	EPA5030GCFID
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	74.2	N/A	% Rec	1.0	06/26/95	07/01/95	EPA3550GCFID
TPHC - Motor Oil	87.9	N/A	% Rec	1.0	06/26/95	07/01/95	EPA3550GCFID
Total Petro. Hydrocarbons	91.2	N/A	% Rec	1.0	06/28/95	06/28/95	SM5520-C,E,F

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9506412

Attention: Denas Scott
Results & Invoice to: Eel River Sawmills Inc
Address: Route 1 Box 459-A
Fortuna CA 95540
Phone: (707) 725-6911
Copies of Report to: Marty Kay SHN Engineering
812 W Wabash Ave
Eureka, CA 95501

PROJECT INFORMATION
Project Number: 930121.160
Project Name: Specialty Mill
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5-7 Day
☑ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX	TPHD/MO	Cd, Cr, Pb, Ni, Zn	Pb
1A	MW-1 @ 1-1½	6-21-95	0925	Soil		13	X			
B	@ 1½-2		0925					X		
C	@ 0.5-1		0925						X	
2A	@ 9½-10'		1030				X			
B	@ 9-9½		1030					X		
C	@ 8½-9		1030						X	
3A	MW-2 @ 3½-4		1255				X			
B	@ 3-3½		1255					X		
C	@ 2½-3		1255				no		X	4
4	MW-3 @ 1½-2	6-22-95	0935				X			

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Return All Brass Tubes to SHN

Test this sample for Pb only!

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis Cobura Curtis Cobura	6/22/95 1605		

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX A

P. 2 of 3

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

APPENDIX J

9506412

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc
Address: Route 1, Box 459-A
Fortuna, CA 95540
Phone: (707) 725-6911
Copies of Report to: Marty Lay SHN Engineering
812 W Wabash Ave
Eureka, CA 95501

PROJECT INFORMATION

Project Number: 930121.100
Project Name: Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	TPHG/BTEX	TPHD/MO	Cd, Cr, Ni, Pb, Zn	8270	TPH IR
CONTAINER						13	13	13	13	13
B	MW-3 @ 1-1½	6-22-95	0935	Soil	1		X			
C	@ ½-1	↓	0935	↓	1			X		
5A	@ 7-7½	↓	1010	↓	1	X				
B	@ 6½-7	↓	↓	↓	1		X			
E	@ 6-6½	↓	↓	↓	1			X		
D	@ 8-8½	↓	↓	↓	1				X	
D	@ 7½-7¾	↓	↓	↓	1					X
6A	@ 17-17½	↓	1100	↓	1	X				
B	@ 16½-17	↓	↓	↓	1		X			
C	@ 16-16½	↓	↓	↓	1			X		

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5-7 Day
☑ STD (2-3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Return All Brass Tubes to SHN

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis Coburn Curtis Coburn	6/23/95 1005	S Beene	6-23-95 1005

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
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Chain of Custody

9506412

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc
Address: Route 1 Box 459-A
Fortuna CA 95540
Phone: (707) 725-6911
Copies of Report to: Marty Lay SHN Engineering
812 W Wabash Ave
Eureka, CA 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: Specialty Mill
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS
A	MW-4 @ 4½-5	6-22-95	1510	Soil		1	TPH/BTEX
B	@ 4-4½					1	TPH
C	@ 3½-4					1	TPH
D	@ 5-5½					1	TPH
E	@ 5½-5¾					1	TPH
8	VM-1 @ 1½'					1	TPH
9	DB-1 @ 1¾'	6-22-95	1350			1	TPH
	MW-3 @ 18-18¼	6-22-95	1100	Soil		1	TPH
	@ 17½-18					1	TPH

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Return All Brass tubes to SHN

Hold these two samples pending notification from Marty Lay (SHN)

2 jar A
2 Brass tube A

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis Coburn Curtis Coburn	6/23/95 1005		6-23-95 1005

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA _____
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX J

APPENDIX J

NORTH COAST LABORATORIES LTD.

Date: 07/12/95 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 95-06-453

INVOICE # 60045712

Attn: Colin Dazzi

WORK ID: 930121.100/Specialty Mill

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-3 @ 18-18.25
02	Blank
03	Lab. Control Sample

Comments:

An EPA specified standard was used for the TPHIR analysis.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX J

SAMPLE ID: MW-3 @ 18-18.25 FRAC.: 01A COLLECTED: 06/22/95 RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Total Petro. Hydrocarbons	ND	50	ug/g	1.0	07/07/95	07/10/95	SM5520-C,E,F

SAMPLE ID: Blank FRAC.: 02A COLLECTED: N/A RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Total Petro. Hydrocarbons	ND	50	ug/g	1.0	07/07/95	07/10/95	SM5520-C,E,F

SAMPLE ID: Lab. Control Sample FRAC.: 03A COLLECTED: N/A RECEIVED: 06/23/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Total Petro. Hydrocarbons	80.0	N/A	% Rec	1.0	07/07/95	07/10/95	SM5520-C,E,F

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Chain of Custody

9506453

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc
Address: Route 1 Box 459-A
Fortuna CA 95540
Phone: (707) 725-6911
Copies of Report to: Marty Lay SHN Engineering
812 W. Wabash Ave
Eureka, CA 95501

PROJECT INFORMATION

Project Number: 920121.100
Project Name: Specialty Mill
Purchase Order Number:

				PRESERVATIVE							
				CONTAINER	13	13	11	12	11		
				ANALYSIS	TPH G/BTEX	TPH D/[illegible]	[illegible]	[illegible]	TPH-HR		
LAB ID	SAMPLE ID	DATE	TIME	MATRIX*							
	MW-4 @ 4½-5	6-22-95	1510	Soil	X						
	@ 4-4½	↓	↓	↓		X					
	@ 3½-4						X				
	@ 5-5½							X			
	@ 5½-5¾								X		
	VM-1 @ 1½'								X		
	DB-1 @ 1¾'	6-22-95	1350	↓					X		
	MW-3 @ 18-18¼	6-22-95	1100	Soil							
	@ 17½-18	↓	↓	↓							

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis Coburn Curtis Coburn	6/23/95 1005	S Reese	6-23-95 1005

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Return All Brass tubes to SHN

Hold these two samples pending notification from Marty Lay (SHN)

jar
Brass tube

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX J

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

NORTH COAST LABORATORIES LTD.
5680 WEST END ROAD
ARCATA, CA 95521

ATTN: DENISE BRADFORD
CLIENT PROJ. ID: -

REPORT DATE: 07/10/95

DATE(S) SAMPLED: 06/22/95

DATE RECEIVED: 06/27/95

AEN WORK ORDER: 9506354

PROJECT SUMMARY:

On June 27, 1995, this laboratory received 2 soil sample(s).

Client requested sample(s) be analyzed for organic parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

NORTH COAST LABORATORIES LTD.

SAMPLE ID: 9506413-1A (MW-3 @ 8-8.5)
AEN LAB NO: 9506354-01
AEN WORK ORDER: 9506354
CLIENT PROJ. ID: -

DATE SAMPLED: 06/22/95
DATE RECEIVED: 06/27/95
REPORT DATE: 07/10/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for BNAs	EPA 3550	-		Extrn Date	06/28/95
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	06/30/95
Acenaphthylene	208-96-8	ND	330	ug/kg	06/30/95
Anthracene	120-12-7	ND	330	ug/kg	06/30/95
Benzidine	92-87-5	ND	1600	ug/kg	06/30/95
Benzoic Acid	65-85-0	ND	1600	ug/kg	06/30/95
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	06/30/95
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	06/30/95
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	06/30/95
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	06/30/95
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	06/30/95
Benzyl Alcohol	100-51-6	ND	660	ug/kg	06/30/95
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	06/30/95
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	06/30/95
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	06/30/95
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	06/30/95
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	06/30/95
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	06/30/95
4-Chloroaniline	106-47-8	ND	660	ug/kg	06/30/95
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	06/30/95
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	06/30/95
Chrysene	218-01-9	ND	330	ug/kg	06/30/95
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	06/30/95
Dibenzofuran	132-64-9	ND	330	ug/kg	06/30/95
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	06/30/95
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	06/30/95
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	06/30/95
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	06/30/95
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	06/30/95
Diethyl Phthalate	84-66-2	ND	330	ug/kg	06/30/95
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	06/30/95
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	06/30/95
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	06/30/95
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	06/30/95
Fluoranthene	206-44-0	ND	330	ug/kg	06/30/95
Fluorene	86-73-7	ND	330	ug/kg	06/30/95
Hexachlorobenzene	118-74-1	ND	330	ug/kg	06/30/95
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	06/30/95
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	06/30/95
Hexachloroethane	67-72-1	ND	330	ug/kg	06/30/95

NORTH COAST LABORATORIES LTD.

SAMPLE ID: 9506413-1A (MW-3 @ 8-8.5)
AEN LAB NO: 9506354-01
AEN WORK ORDER: 9506354
CLIENT PROJ. ID: -

DATE SAMPLED: 06/22/95
DATE RECEIVED: 06/27/95
REPORT DATE: 07/10/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	06/30/95
Isophorone	78-59-1	ND	330	ug/kg	06/30/95
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	06/30/95
Naphthalene	91-20-3	ND	330	ug/kg	06/30/95
2-Nitroaniline	88-74-4	ND	1600	ug/kg	06/30/95
3-Nitroaniline	99-09-2	ND	1600	ug/kg	06/30/95
4-Nitroaniline	100-01-6	ND	1600	ug/kg	06/30/95
Nitrobenzene	98-95-3	ND	330	ug/kg	06/30/95
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	06/30/95
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	06/30/95
Phenanthrene	85-01-8	ND	330	ug/kg	06/30/95
Pyrene	129-00-0	ND	330	ug/kg	06/30/95
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	06/30/95
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	06/30/95
2-Chlorophenol	95-57-8	ND	330	ug/kg	06/30/95
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	06/30/95
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	06/30/95
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	06/30/95
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	06/30/95
2-Methylphenol	95-48-7	ND	330	ug/kg	06/30/95
4-Methylphenol	106-44-5	ND	330	ug/kg	06/30/95
2-Nitrophenol	88-75-5	ND	330	ug/kg	06/30/95
4-Nitrophenol	100-02-7	ND	1600	ug/kg	06/30/95
Pentachlorophenol	87-86-5	ND	1600	ug/kg	06/30/95
Phenol	108-95-2	ND	330	ug/kg	06/30/95
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	06/30/95
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	06/30/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

NORTH COAST LABORATORIES LTD.

SAMPLE ID: 9506413-2A (MW-4 @ 5-5.5)
AEN LAB NO: 9506354-02
AEN WORK ORDER: 9506354
CLIENT PROJ. ID: -

DATE SAMPLED: 06/22/95
DATE RECEIVED: 06/27/95
REPORT DATE: 07/10/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for BNAs	EPA 3550	-		Extrn Date	06/28/95
Semi-Volatile Organics	EPA 8270				
Acenaphthene	83-32-9	ND	330	ug/kg	07/01/95
Acenaphthylene	208-96-8	ND	330	ug/kg	07/01/95
Anthracene	120-12-7	ND	330	ug/kg	07/01/95
Benzidine	92-87-5	ND	1600	ug/kg	07/01/95
Benzoic Acid	65-85-0	ND	1600	ug/kg	07/01/95
Benzo(a)anthracene	56-55-3	ND	330	ug/kg	07/01/95
Benzo(b)fluoranthene	205-99-2	ND	330	ug/kg	07/01/95
Benzo(k)fluoranthene	207-08-9	ND	330	ug/kg	07/01/95
Benzo(g,h,i)perylene	191-24-2	ND	330	ug/kg	07/01/95
Benzo(a)pyrene	50-32-8	ND	330	ug/kg	07/01/95
Benzyl Alcohol	100-51-6	ND	660	ug/kg	07/01/95
Bis(2-chloroethoxy)methane	111-91-1	ND	330	ug/kg	07/01/95
Bis(2-choroethyl) Ether	111-44-4	ND	330	ug/kg	07/01/95
Bis(2-chloroisopropyl) Ether	108-60-1	ND	330	ug/kg	07/01/95
Bis(2-ethylhexyl) Phthalate	117-81-7	ND	330	ug/kg	07/01/95
4-Bromophenyl Phenyl Ether	101-55-3	ND	330	ug/kg	07/01/95
Butylbenzyl Phthalate	85-68-7	ND	330	ug/kg	07/01/95
4-Chloroaniline	106-47-8	ND	660	ug/kg	07/01/95
2-Chloronaphthalene	91-58-7	ND	330	ug/kg	07/01/95
4-Chlorophenyl Phenyl Ether	7005-72-3	ND	330	ug/kg	07/01/95
Chrysene	218-01-9	ND	330	ug/kg	07/01/95
Dibenzo(a,h)anthracene	53-70-3	ND	330	ug/kg	07/01/95
Dibenzofuran	132-64-9	ND	330	ug/kg	07/01/95
Di-n-butyl Phthalate	84-74-2	ND	330	ug/kg	07/01/95
1,2-Dichlorobenzene	95-50-1	ND	330	ug/kg	07/01/95
1,3-Dichlorobenzene	541-73-1	ND	330	ug/kg	07/01/95
1,4-Dichlorobenzene	106-46-7	ND	330	ug/kg	07/01/95
3,3'-Dichlorobenzidine	91-94-1	ND	660	ug/kg	07/01/95
Diethyl Phthalate	84-66-2	ND	330	ug/kg	07/01/95
Dimethyl Phthalate	131-11-3	ND	330	ug/kg	07/01/95
2,4-Dinitrotoluene	121-14-2	ND	330	ug/kg	07/01/95
2,6-Dinitrotoluene	606-20-2	ND	330	ug/kg	07/01/95
Di-n-octyl Phthalate	117-84-0	ND	330	ug/kg	07/01/95
Fluoranthene	206-44-0	ND	330	ug/kg	07/01/95
Fluorene	86-73-7	ND	330	ug/kg	07/01/95
Hexachlorobenzene	118-74-1	ND	330	ug/kg	07/01/95
Hexachlorobutadiene	87-68-3	ND	330	ug/kg	07/01/95
Hexachlorocyclopentadiene	77-47-4	ND	330	ug/kg	07/01/95
Hexachloroethane	67-72-1	ND	330	ug/kg	07/01/95

NORTH COAST LABORATORIES LTD.

SAMPLE ID: 9506413-2A (MW-4 @ 5-5.5)
AEN LAB NO: 9506354-02
AEN WORK ORDER: 9506354
CLIENT PROJ. ID: -

DATE SAMPLED: 06/22/95
DATE RECEIVED: 06/27/95
REPORT DATE: 07/10/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330	ug/kg	07/01/95
Isophorone	78-59-1	ND	330	ug/kg	07/01/95
2-Methylnaphthalene	91-57-6	ND	330	ug/kg	07/01/95
Naphthalene	91-20-3	ND	330	ug/kg	07/01/95
2-Nitroaniline	88-74-4	ND	1600	ug/kg	07/01/95
3-Nitroaniline	99-09-2	ND	1600	ug/kg	07/01/95
4-Nitroaniline	100-01-6	ND	1600	ug/kg	07/01/95
Nitrobenzene	98-95-3	ND	330	ug/kg	07/01/95
N-Nitrosodiphenylamine	86-30-6	ND	330	ug/kg	07/01/95
N-Nitrosodi-n-propylamine	621-64-7	ND	330	ug/kg	07/01/95
Phenanthrene	85-01-8	ND	330	ug/kg	07/01/95
Pyrene	129-00-0	ND	330	ug/kg	07/01/95
1,2,4-Trichlorobenzene	120-82-1	ND	330	ug/kg	07/01/95
4-Chloro-3-methylphenol	59-50-7	ND	330	ug/kg	07/01/95
2-Chlorophenol	95-57-8	ND	330	ug/kg	07/01/95
2,4-Dichlorophenol	120-83-2	ND	330	ug/kg	07/01/95
2,4-Dimethylphenol	105-67-9	ND	330	ug/kg	07/01/95
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600	ug/kg	07/01/95
2,4-Dinitrophenol	51-28-5	ND	1600	ug/kg	07/01/95
2-Methylphenol	95-48-7	ND	330	ug/kg	07/01/95
4-Methylphenol	106-44-5	ND	330	ug/kg	07/01/95
2-Nitrophenol	88-75-5	ND	330	ug/kg	07/01/95
4-Nitrophenol	100-02-7	ND	1600	ug/kg	07/01/95
Pentachlorophenol	87-86-5	ND	1600	ug/kg	07/01/95
Phenol	108-95-2	ND	330	ug/kg	07/01/95
2,4,5-Trichlorophenol	95-95-4	ND	330	ug/kg	07/01/95
2,4,6-Trichlorophenol	88-06-2	ND	330	ug/kg	07/01/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9506354

CLIENT PROJECT ID: -

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8270

AEN JOB NO: 9506354
DATE EXTRACTED: 06/28/95
INSTRUMENT: 11
MATRIX: SOIL

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
06/30/95	9506413-1A (MW-3 @ 8-8.5)	01	48	76	82	35	51	55
07/01/95	9506413-2A (MW-4 @ 5-5.5)	02	59	70	77	40	70	57
QC Limits:			23-120	30-115	18-137	24-113	25-121	19-122

DATE EXTRACTED: 06/19/95
DATE ANALYZED: 06/20/95
SAMPLE SPIKED: 9506151-01
INSTRUMENT: 11

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/kg)	Average Percent Recovery	RPD	QC Limits: Percent Recovery	QC Limits: RPD
Phenol	3630	52	14	39-102	36
2-Chlorophenol	3470	73	12	20-123	37
1,4-Dichlorobenzene	3430	61	12	20-108	14
N-Nitrosodi-n-propylamine	3500	63	<1	0-156	41
1,2,4-Trichlorobenzene	3450	69	10	31-101	33
4-Chloro-3-methylphenol	3380	89	4	37-136	38
Acenaphthene	3330	81	11	48-115	18
4-Nitrophenol	3560	99	15	18-131	35
2,4-Dinitrotoluene	3480	60	8	34-101	33
Pentachlorophenol	3450	85	12	0-140	30
Pyrene	3580	73	24	26-148	24

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

P. 2 of 3

1 & 2

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9506413

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc
Address: Route 1, Box 459-A
Fortuna, CA 95540
Phone: (707) 725-6911
Copies of Report to: Marty bay SHN Engineering
812 W Wabash Ave
Eureka, CA 95501

PROJECT INFORMATION

Project Number: 930121.100
Project Name: Specialty Mill
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

					TPHG/BTEX	TPHD/MO	CCS N. Pb Zn	8270	TPH IR
PRESERVATIVE									
CONTAINER					13	13	—	13	—
LAB ID	**SAMPLE ID**	**DATE**	**TIME**	**MATRIX***					
	MW-3 @ 1-1½	6-22-95	0935	Soil		X			
	@ ½-1	↓	0935	↓			X		
	@ 7-7½	↓	1010	↓	X				
	@ 6½-7	↓	↓	↓		X			
	@ 6-6½	↓	↓	↓			X		
	@ 8-8½	↓	↓	↓				X	
	@ 7½-7¾	↓	↓	↓					X
	@ 17-17½	↓	1100	↓	X				
	@ 16½-17	↓	↓	↓		X			
	@ 16-16½	↓	↓	↓			X		

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Return All Brass Tubes to SHN

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis Coburn Curtis Coburn	6/22/95	[illegible]	[illegible]

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

APPENDIX J

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

2802

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9501413

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc
Address: Route 1 Box 459-A
Fortuna CA 95540
Phone: (707) 725-6911
Copies of Report to: Marty Kay SHN Engineers
812 w Wabash Ave
Eureka, CA 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS
	MW-4 @ 4½-5	6-21-95	1510	Soil	1		
	@ 4-4½				1		
	@ 3½-4				1		
2	@ 5-5½				1		
	@ 5½-5¾				1		
	VM-1 @ 1½				1		
	DB-1 @ 1¾'	6-22-95	1350		1		
	MW-3 @ 18-18½	6-22-95	1100	Soil	1		
	@ 17½-18				1		

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

APPENDIX J

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Return All Brass tubes to SHN

Hold these two samples pending notification from Marty Kay (SHN)

2 jar
1 Brass tube

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis Coburn Curtis Coburn	6/23 1900		

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX J

APPENDIX J

NORTH COAST LABORATORIES LTD.

DATE: July 17, 1995

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

ATTENTION: Colin Dazzi

NCL: 95-06-522

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ADDENDUM TO CHEMICAL EXAMINATION REPORT

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PARAMETER	**NOTATIONS**
TPHC Diesel	Sample 03D contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. A surrogate is not added to the diesel/motor oil analysis because the surrogate elutes in the motor oil range of molecular weights. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

Roxanne Kolli
Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

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APPENDIX J

NORTH COAST LABORATORIES LTD.

Date: 07/19/95 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 95-06-522

INVOICE # 60045849

Attn: Colin Dazzi

WORK ID: 930121.100/ERS Specialty Mill

REPORT CERTIFIED BY

Roxanne Kohl
Laboratory Supervisor(s)

Michelle Postl
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
01	MW-1
01	MW-1
02	MW-3
02	MW-3
02	MW-3
02	MW-3
03	MW-2
03	MW-2
03	MW-2
03	MW-2
04	MW-4
04	MW-4
04	MW-4
04	MW-4
05	QC-1
05	QC-1
05	QC-1
05	QC-1
06	Blank
07	Lab. Control Sample

Comments:

Previously reported on 07/17/95.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX J

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 06/28/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
Benzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Toluene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
o Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Surrogate:						07/12/95	EPA 602
1-chloro-4-fluorobenzen	93.6	N/A	% Rec	1.0		07/12/95	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		07/12/95	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 06/28/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	ND	0.010	mg/L	1.0		07/14/95	EPA 200.7
| Chromium	0.022	0.0050	mg/L	1.0		07/14/95	EPA 200.7
| Nickel	0.052	0.020	mg/L	1.0		07/14/95	EPA 200.7
| Zinc	0.030	0.020	mg/L	1.0		07/14/95	EPA 200.7
Lead	ND	0.020	mg/L	4.0		07/14/95	EPA 239.2

SAMPLE ID: MW-1 FRAC.: 01C COLLECTED: 06/28/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.43	0.10	mg/L Tannin	1.0		07/12/95	SM 5550B

SAMPLE ID: MW-1 FRAC.: 01D COLLECTED: 06/28/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID

APPENDIX J

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
Benzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Toluene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
o Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Surrogate:						07/12/95	EPA 602
1-chloro-4-fluorobenzen	93.3	N/A	% Rec	1.0		07/12/95	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		07/12/95	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
Cadmium	ND	0.010	mg/L	1.0		07/14/95	EPA 200.7
Chromium	ND	0.0050	mg/L	1.0		07/14/95	EPA 200.7
Nickel	ND	0.020	mg/L	1.0		07/14/95	EPA 200.7
Zinc	ND	0.020	mg/L	1.0		07/14/95	EPA 200.7
Lead	ND	0.020	mg/L	4.0		07/14/95	EPA 239.2

SAMPLE ID: MW-3 FRAC.: 02C COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	2.3	0.10	mg/L Tannin	1.0		07/12/95	SM 5550B

SAMPLE ID: MW-3 FRAC.: 02D COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID

APPENDIX J

SAMPLE ID: MW-2 FRAC.: 03A COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
Benzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Toluene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
o Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Surrogate:						07/12/95	EPA 602
1-chloro-4-fluorobenzen	86.8	N/A	% Rec	1.0		07/12/95	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		07/12/95	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 03B COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Lead	0.036	0.020	mg/L	4.0		07/14/95	EPA 239.2

SAMPLE ID: MW-2 FRAC.: 03C COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.1	0.10	mg/L Tannin	1.0		07/12/95	SM 5550B

SAMPLE ID: MW-2 FRAC.: 03D COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	74	50	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 04A COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
Benzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Toluene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602

APPENDIX J

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
o Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Surrogate:						07/12/95	EPA 602
1-chloro-4-fluorobenzen	91.3	N/A	% Rec	1.0		07/12/95	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		07/12/95	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 04B COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	ND	0.010	mg/L	1.0		07/14/95	EPA 200.7
| Chromium	0.062	0.0050	mg/L	1.0		07/14/95	EPA 200.7
| Nickel	0.11	0.020	mg/L	1.0		07/14/95	EPA 200.7
| Zinc	0.061	0.020	mg/L	1.0		07/14/95	EPA 200.7
Lead	ND	0.020	mg/L	4.0		07/14/95	EPA 239.2

SAMPLE ID: MW-4 FRAC.: 04C COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.7	0.10	mg/L Tannin	1.0		07/12/95	SM 5550B

SAMPLE ID: MW-4 FRAC.: 04D COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
Benzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Toluene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
o Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Surrogate:						07/12/95	EPA 602
1-chloro-4-fluorobenzen	96.7	N/A	% Rec	1.0		07/12/95	EPA 602

APPENDIX J

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Gasoline/water	ND	50	ug/L	1.0		07/12/95	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05B COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	ND	0.010	mg/L	1.0		07/14/95	EPA 200.7
| Chromium	0.066	0.0050	mg/L	1.0		07/14/95	EPA 200.7
| Nickel	0.11	0.020	mg/L	1.0		07/14/95	EPA 200.7
| Zinc	0.057	0.020	mg/L	1.0		07/14/95	EPA 200.7
Lead	ND	0.020	mg/L	4.0		07/14/95	EPA 239.2

SAMPLE ID: QC-1 FRAC.: 05C COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.8	0.10	mg/L Tannin	1.0		07/12/95	SM 5550B

SAMPLE ID: QC-1 FRAC.: 05D COLLECTED: 06/29/95 RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
Benzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Toluene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
o Xylene	ND	0.50	ug/L	1.0		07/12/95	EPA 602
Surrogate:						07/12/95	EPA 602
1-chloro-4-fluorobenzen	106	N/A	% Rec	1.0		07/12/95	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	ND	0.010	mg/L	1.0		07/14/95	EPA 200.7
| Chromium	ND	0.0050	mg/L	1.0		07/14/95	EPA 200.7

APPENDIX J

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
| Nickel	ND	0.020	mg/L	1.0		07/14/95	EPA 200.7
| Zinc	ND	0.020	mg/L	1.0		07/14/95	EPA 200.7
Lead	ND	0.020	mg/L	4.0		07/14/95	EPA 239.2
TPHC Gasoline/water	ND	50	ug/L	1.0		07/12/95	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/11/95	07/11/95	EPA3510GCFID
Tannin and Lignin	ND	0.10	mg/L Tannin	1.0		07/12/95	SM 5550B

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 06/29/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
Benzene	94.5	N/A	% Rec	1.0		07/12/95	EPA 602
Toluene	95.6	N/A	% Rec	1.0		07/12/95	EPA 602
Ethylbenzene	95.3	N/A	% Rec	1.0		07/12/95	EPA 602
m,p Xylene	94.9	N/A	% Rec	1.0		07/12/95	EPA 602
o Xylene	96.4	N/A	% Rec	1.0		07/12/95	EPA 602
Surrogate:						07/12/95	EPA 602
1-chloro-4-fluorobenzen	86.4	N/A	% Rec	1.0		07/12/95	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	97.0	N/A	% Rec	1.0		07/14/95	EPA 200.7
| Chromium	99.3	N/A	% Rec	1.0		07/14/95	EPA 200.7
| Nickel	100	N/A	% Rec	1.0		07/14/95	EPA 200.7
| Zinc	101	N/A	% Rec	1.0		07/14/95	EPA 200.7
Lead	97.3	N/A	% Rec	4.0		07/14/95	EPA 239.2
TPHC Gasoline/water	103	N/A	% Rec	1.0		07/12/95	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	62.2	N/A	% Rec	1.0	07/11/95	07/11/95	EPA3510GCFID
TPHC - Motor Oil	68.6	N/A	% Rec	1.0	07/11/95	07/11/95	EPA3510GCFID
Tannin and Lignin	96.8	N/A	% Rec	1.0		07/12/95	SM 5550B

P. 1 of [illegible]

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

APPENDIX J

LABORATORY NUMBER: 9506522

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459-A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Speciality Mill
Purchase Order Number:

	TPHG/BTXE	8270	5 metals (Cu, Cr, Ni, Zn, As)	Tann. + Lign.	TPHD/TPHM
PRESERVATIVE	b				
CONTAINER	9	2-1	2	2	7

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*		TPHG/BTXE	8270	5 metals	Tann. + Lign.	TPHD/TPHM
1	MW-1	6/28/95	1520	GW	2	X				
	↓	↓	1522	↓	2		X			
	↓	↓	1523	↓	1			X		
	↓	↓	1524	↓	1				X	
	↓	↓	1525	↓	1					X
2	MW-3	6/29/95	1340	↓	2	X				
	↓	↓	1342	↓	2		X			
	↓	↓	1343	↓	1			X		
	↓	↓	1344	↓	1				X	
	↓	↓	1345	↓	1					X

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5-7 Day
☒ STD (2-3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Intact / Cold

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1507 6/29/95	[signature]	6/29/95 1507

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9T0622

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box - 4591
~~[illegible]~~ Fortuna, Ca
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: ________
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION

Project Number: 930121.100
Project Name: ERS Speciality Mill
Purchase Order Number: ________

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*		TPHG/BTEX	Cr+6	5 metals Cd, Cr, Pb, Ni, Zn	Tann. + Lign.	TPHD/TPHm	Lead								
				PRESERVATIVE		b													
				CONTAINER		9	2-7	2	2	7	2								
3	MW-2	6/29/95	1410	GW	3	X													
	↓	↓	1412	↓	2		X				●								
			1413		1				●		X								
			1414		1				X	●									
			1415		1					X									
4	MW-4		1440		3	X													
			1442		2		X												
			1443		1			X											
			1444		1				X										
	↓	↓	1445	↓	1					X									

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Intact / Cool
17B

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1507 6/29/95	[signature]	6/29/95 1507

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX J

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9506522

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459-A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Specialty mill
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: / /
Final Report: FAX ☐ Verbal ☐ By: / /

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

							TPHG/BTEX	8290	5 metals Cd, Cr, Ni, Zn, Pb	Tann. + Lign.	TPHD/TPHM
					PRESERVATIVE		b				
					CONTAINER		9	7	2	2	7
LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS						
5	QC-1	6/29/95	—	GW		3	x				
	↓	↓	—	↓		2		x			
			—			1			x		
			—			1				x	
			—			1					x

SAMPLE CONDITION/SPECIAL INSTRUCTIONS: Intact / cold
TB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1507 6/29/95	[signature]	6/29/95 1507

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX J

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

NORTH COAST LABORATORIES LTD.
5680 WEST END ROAD
ARCATA, CA 95521

ATTN: DENISE BRADFORD
CLIENT PROJ. ID: 9506515

REPORT DATE: 07/19/95

DATE(S) SAMPLED: 06/28/95-07/29/95

DATE RECEIVED: 07/01/95

AEN WORK ORDER: 9507001

PROJECT SUMMARY:

On July 1, 1995, this laboratory received 5 water sample(s).

Client requested sample(s) be analyzed for organic parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

APPENDIX J

American Environmental Network

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-1
AEN LAB NO: 9507001-01
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/28/95
DATE RECEIVED: 07/01/95
REPORT DATE: 07/19/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

APPENDIX J

American Environmental Network

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-3
AEN LAB NO: 9507001-02
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 07/19/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

APPENDIX J

American Environmental Network

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-2
AEN LAB NO: 9507001-03
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 07/19/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

APPENDIX J

American Environmental Network

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-4
AEN LAB NO: 9507001-04
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 07/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 07/19/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

APPENDIX J

American Environmental Network

NORTH COAST LABORATORIES LTD.

SAMPLE ID: QC-1
AEN LAB NO: 9507001-05
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 07/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 07/19/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

APPENDIX J

American Environmental Network

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9507001

CLIENT PROJECT ID: 9506515

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

APPENDIX J

American Environmental Network

QUALITY CONTROL DATA

METHOD: EPA 8080

AEN JOB NO: 9507001
DATE EXTRACTED: 07/03/95
INSTRUMENT: B
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery 2,4,5,6-Tetrachloro-meta-xylene
07/05/95	MW-1	01	97
07/05/95	MW-3	02	104
07/05/95	MW-2	03	99
07/05/95	MW-4	04	101
07/05/95	QC-1	05	103
QC Limits:			30-131

DATE EXTRACTED: 06/30/95
DATE ANALYZED: 07/05/95
SAMPLE SPIKED: DI WATER
INSTRUMENT: B

Method Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
A1260	4.00	107	4	53-133	16

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

APPENDIX J

American Environmental Network

QUALITY CONTROL DATA

METHOD: EPA 8270

AEN JOB NO: 9507001
DATE EXTRACTED: 07/03/95
INSTRUMENT: 11
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Nitrobenzene-d_5	2-Fluorobiphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluorophenol	2,4,6-Tribromophenol
07/07/95	MW-1	01	84	78	120	88	87	83
07/07/95	MW-3	02	82	78	88	86	78	102
07/07/95	MW-2	03	80	73	74	89	82	89
07/07/95	MW-4	04	98	85	83	101	80	100
07/07/95	QC-1	05	79	85	77	106	100	96
QC Limits:			16-128	22-130	36-144	20-111	12-121	40-162

DATE EXTRACTED: 07/03/95
DATE ANALYZED: 07/08/95
SAMPLE SPIKED: DI WATER
INSTRUMENT: 11

Method Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits: Percent Recovery	QC Limits: RPD
Phenol	220	70	6	59-122	39
2-Chlorophenol	209	91	2	72-120	42
1,4-Dichlorobenzene	208	77	2	34-105	38
N-Nitrosodi-n-propylamine	212	68	7	46-118	30
1,2,4-Trichlorobenzene	209	86	10	34- 88	28
4-Chloro-3-methylphenol	205	75	1	61-113	27
Acenaphthene	202	81	3	55-117	18
4-Nitrophenol	216	82	25	39- 96	34
2,4-Dinitrotoluene	211	91	5	58-104	29
Pentachlorophenol	209	92	8	37-117	44
Pyrene	217	70	7	44-117	26

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-1, S-A

APPENDIX J

9507001

Page 1 of 1

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

SUB-CONTRACT
CHAIN OF CUSTODY RECORD

Sampler (Signature): Date Shipped: 6/30/95 Carrier: Airborne

Air Bill No: Cooler #: 201

SHIP TO:

Client Name:

Company: American Env. Network

Address: 3340 Vincent Rd
Pleasant Hill, CA. 94523

Attn: Sample Control (510)930-9092

SEND RESULTS TO:

NORTH COAST LABS
5680 West End Road
Arcata, CA 95521
(707) 822-4649

Relinquished by: (Signature) Date/Time
[signature] 6/30/95 1315

Received by: (Signature) Date/Time
[signature] 7/1/95 11:20

Relinquished by: (Signature) Date/Time

Received by: (Signature) Date/Time

Relinquished by: (Signature) Date/Time

** Received by Laboratory by: Date/Time

Relinquished by: (Signature) Date/Time

Received by: (Signature) Date/Time

ANALYSIS REQUEST

NCL Sample ID Number	Sample Description	(# bottles) Date/Time Sampled	Analysis Requested	Sample Condition
9506515-1A	MW-1 (2)	6/29/95	8270* 01AB	Cool/6000
2A	MW-3	6/29/95	02AB	
3A	MW-2		03AB	
4A	MW-4		04AB	
5A	QC-1		05AB	
		8080	8270	

Special Instructions: * To include PCB's, PNA's & PCP.
Please also include blank & lab. control sample.

Preservation Record Date: 7/1/95 Initials: EH Preservation: Refrig

EXPECTED ANALYTICAL T.A.T.'s:
Immediate
Attn: (100% Surcharge): RUSH (50% Surcharge): Standard: X

Return Chain of Custody to NCL

APPENDIX I

American Environmental Network

NORTH COAST LABORATORIES LTD.
5680 WEST END ROAD
ARCATA, CA 95521

ATTN: DENISE BRADFORD
CLIENT PROJ. ID: 9506515

REPORT DATE: 08/01/95

DATE(S) SAMPLED: 06/28/95-06/29/95

DATE RECEIVED: 07/01/95

AEN WORK ORDER: 9507001

PROJECT SUMMARY:

On July 1, 1995, this laboratory received 5 water sample(s).

Client requested sample(s) be analyzed for organic parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

Revision of report dated 07/19/95

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-1
AEN LAB NO: 9507001-01
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/28/95
DATE RECEIVED: 07/01/95
REPORT DATE: 08/01/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs by EPA 8270	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-3
AEN LAB NO: 9507001-02
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 08/01/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs by EPA 8270	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-2
AEN LAB NO: 9507001-03
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 08/01/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs by EPA 8270	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

NORTH COAST LABORATORIES LTD.

SAMPLE ID: MW-4
AEN LAB NO: 9507001-04
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 08/01/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs by EPA 8270	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

NORTH COAST LABORATORIES LTD.

SAMPLE ID: QC-1
AEN LAB NO: 9507001-05
AEN WORK ORDER: 9507001
CLIENT PROJ. ID: 9506515

DATE SAMPLED: 06/29/95
DATE RECEIVED: 07/01/95
REPORT DATE: 08/01/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for Pest/PCBs	EPA 3510	-		Extrn Date	07/03/95
Polychlorinated Biphenyls	EPA 8080				
Aroclor 1016	12674-11-2	ND	0.5	ug/L	07/05/95
Aroclor 1221	11104-28-2	ND	0.5	ug/L	07/05/95
Aroclor 1232	11141-16-5	ND	0.5	ug/L	07/05/95
Aroclor 1242	53469-21-9	ND	0.5	ug/L	07/05/95
Aroclor 1248	12672-29-6	ND	0.5	ug/L	07/05/95
Aroclor 1254	11097-69-1	ND	0.5	ug/L	07/05/95
Aroclor 1260	11096-82-5	ND	0.5	ug/L	07/05/95
Pentachlorophenol	EPA 8270	ND	50	ug/L	07/07/95
#Extraction for PNAs	EPA 3520	-		Extrn Date	07/03/95
PNAs by EPA 8270	EPA 8270				
Acenaphthene	83-32-9	ND	10	ug/L	07/07/95
Acenaphthylene	208-96-8	ND	10	ug/L	07/07/95
Anthracene	120-12-7	ND	10	ug/L	07/07/95
Benzo(a)anthracene	56-55-3	ND	10	ug/L	07/07/95
Benzo(b)fluoranthene	205-99-2	ND	10	ug/L	07/07/95
Benzo(k)fluoranthene	207-08-9	ND	10	ug/L	07/07/95
Benzo(g,h,i)perylene	191-24-2	ND	10	ug/L	07/07/95
Benzo(a)pyrene	50-32-8	ND	10	ug/L	07/07/95
Chrysene	218-01-9	ND	10	ug/L	07/07/95
Dibenzo(a,h)anthracene	53-70-3	ND	10	ug/L	07/07/95
Fluoranthene	206-44-0	ND	10	ug/L	07/07/95
Fluorene	86-73-7	ND	10	ug/L	07/07/95
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10	ug/L	07/07/95
Naphthalene	91-20-3	ND	10	ug/L	07/07/95
Phenanthrene	85-01-8	ND	10	ug/L	07/07/95
Pyrene	129-00-0	ND	10	ug/L	07/07/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9507001

CLIENT PROJECT ID: 9506515

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8080

AEN JOB NO: 9507001
DATE EXTRACTED: 07/03/95
INSTRUMENT: B
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery 2,4,5,6-Tetrachloro-meta-xylene
07/05/95	MW-1	01	97
07/05/95	MW-3	02	104
07/05/95	MW-2	03	99
07/05/95	MW-4	04	101
07/05/95	QC-1	05	103
QC Limits:			30-131

DATE EXTRACTED: 06/30/95
DATE ANALYZED: 07/05/95
SAMPLE SPIKED: DI WATER
INSTRUMENT: B

Method Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
A1260	4.00	107	4	53-133	16

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8270

AEN JOB NO: 9507001
DATE EXTRACTED: 07/03/95
INSTRUMENT: 11
MATRIX: WATER

Surrogate Standard Recovery Summary

			Percent Recovery					
Date Analyzed	Client Id.	Lab Id.	Nitro-benzene-d_5	2-Fluoro-biphenyl	Terphenyl-d_{14}	Phenol-d_5	2-Fluoro-phenol	2,4,6-Tribromo-phenol
07/07/95	MW-1	01	84	78	120	88	87	83
07/07/95	MW-3	02	82	78	88	86	78	102
07/07/95	MW-2	03	80	73	74	89	82	89
07/07/95	MW-4	04	98	85	83	101	80	100
07/07/95	QC-1	05	79	85	77	106	100	96
QC Limits:			16-128	22-130	36-144	20-111	12-121	40-162

DATE EXTRACTED: 07/03/95
DATE ANALYZED: 07/08/95
SAMPLE SPIKED: DI WATER
INSTRUMENT: 11

Method Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Phenol	220	70	6	59-122	39
2-Chlorophenol	209	91	2	72-120	42
1,4-Dichlorobenzene	208	77	2	34-105	38
N-Nitrosodi-n-propylamine	212	68	7	46-118	30
1,2,4-Trichlorobenzene	209	86	10	34- 88	28
4-Chloro-3-methylphenol	205	75	1	61-113	27
Acenaphthene	202	81	3	55-117	18
4-Nitrophenol	216	82	25	39- 96	34
2,4-Dinitrotoluene	211	91	5	58-104	29
Pentachlorophenol	209	92	8	37-117	44
Pyrene	217	70	7	44-117	26

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

9506515

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459-A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Specinlity Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPH6/BTXE	8220	5 metals, Cd, Cr, Pb, Ni, Zn	Tann. & Lign.	TPHD/TPHM
1	~~MW-2~~ MW-1	6/28/95	1520	GW	b	9	2				
	↓	↓	1522	↓		2-7		x			
			1523			2			x		
			1524			2				x	
			1525			7					x
2	MW-3	6/29/95	1340			2	x				
			1342			2		x			
			1343			2			x		
			1344			2				x	
	↓	↓	1345	↓		2					x

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

APPENDIX J

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Intact Cool

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1507 6/29/95	[signature] 6/29	9:15

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

APPENDIX J

9506515

LABORATORY NUMBER: [illegible]

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box - 4591
[illegible] Fortuna, Ca.
Phone: 725-6911
Copies of Report to: SHN Marty Loy
812 W. Wabash Ave
Eureka, Ca. 95501

PROJECT INFORMATION

Project Number: 930121.100
Project Name: ERS Speciality Mill
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PRESERVATIVE						b					
CONTAINER						9	2-7	2	2	7	2
ANALYSIS						TPHG/BTEX	8270	5 metals Cd, Cr, Ni, Pb, Zn	Tann. + Lign.	TPHD/TRHm	Lead
LAB ID	SAMPLE ID	DATE	TIME	MATRIX*							
3	mw-2	6/29/95	1410	GW	3	X					
	↓		1412		2		X				
			1413		1						X
			1414		1				X		
	↓		1415		1					X	
4	mw-4		1440		3	X					
	↓		1442		2		X				
			1443		1			X			
			1444		1				X		
	↓	↓	1445	↓	1					X	

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Intact / Cold
17B

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1501 6/29/95	[signature] 6/29/95	1507

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA ☐
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX J

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9506515

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459-A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

PROJECT INFORMATION

Project Number: 930121.100
Project Name: ERS Speciality Mill
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: / /
Final Report: FAX ☐ Verbal ☐ By: / /

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

						TPHG/BTEX	8270	5 metals Cd, Cr, Ni, Zn, Pb	Tann. + Lign.	TPHD/TPHM
PRESERVATIVE						b				
CONTAINER						9	7.7	2	2	7
LAB ID	SAMPLE ID	DATE	TIME	MATRIX*						
5	QC-1	6/29/95	—	GW	3	X				
↓	↓	↓	—	↓	2		X			
			—		1			X		
			—		1				X	
			—		1					X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS: Intact / Cold
17B

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	6/29/95 1507	[signature]	6/29/95 1507

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX E

PERMITS

APPENDIX J

HUMBOLDT COUNTY DIVISION OF ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT
WELL PERMIT APPLICATION

Facility ID # 12618 Permit # 518-A

Facility Name: Former Specialty Mill Site

Site Address: 2000 Foster Avenue, Arcata, CA 95521

Site Owner: Eel River Sawmills, Inc. Telephone: 725-6911

Address: 1053 Northwestern Ave., Fortuna, CA 95540 AP#: 505-161-11

RP Name: Dennis Scott Telephone: 725-6911

Address: 1053 Northwestern Ave., Route 1, Box 459-A, Fortuna, CA 9554[illegible]

Consultant: SHN Consulting Engineers & Geologists Telephone: 441-8855

Address: 812 West Wabash Ave, Eureka, CA 95501 Reg.#/Type:

Driller: All Terrain Exploration Drilling Telephone: (916) 991-2999

Address: P.O. Box 747, Pleasant Grove, CA 95668-0747 C-57 Lic.#: 437836

# On-site		# Offsite	
Wells 4	Borings	Wells	Borings

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

Well Type: ☒ Monitoring Well ☐ Injection Well ☐ Vapor Extraction ☐ Geologic Boring
☐ Extraction Well ☐ Piezometer ☐ Vapor Point ☐ Soil Gas Survey
☐ Vadose Well ☐ Cathodic Protection ☐ Temporary Well Point* * Specify type
Other (specify):

Investigation Type: ☒ Site Assessment ☐ Disposal Practice ☒ UST
☐ Surface Contamination ☐ Surface Impoundment ☐ AST
Other (specify):

Investigation Phase: ☐ Initial ☒ Subsequent ☐ Remediation

Suspected Contaminants: petroleum hydrocarbon substances

Encroachment/Coastal Zone Permit Required (Y/N) N Construction Detail Attached N Included in 5/95 workplan

Total Depth: ~12'
Seal Depth: ~0-4'
Screen Interval: ~4-12'
Bore Diameter: 8"
Casing Diameter: 2"
Drilling Method: HSA

A scaled well construction detail illustrating depth of blank, screen, sanitary and surface seals, and pack size, type and thicknesses; site plan illustrating boring/well locations and buried utilities; a copy of the NCRWQCB approval letter for the workplan (if non-LOP), legal Right-of-Entry, site plan, off site well address, encroachment permit, etc. shall be submitted with this application. Well identification number and type shall be affixed to the exterior surface of the security structure. In addition, all wells must include an identification attached to the interior surface as follows:1) Well ID No. 2) Well Type 3) Well Depth 4) Casing Diameter 5) Screened Interval. Please note well permits cannot be processed without this information.

Disposal/Containment for Soil Cuttings: ~~6 mil sheet plastic~~ 55 gallon Steel Drum.
Disposal/Containment for Rinsate: 55 gallon steel drums
Disposal/Containment for Development Water: 55 gallon steel drums

HUMBOLDT COUNTY DIVISION OF ENVIRONMENTAL HEALTH – HAZARDOUS MATERIALS UNIT
WELL PERMIT APPLICATION

Facility ID # 12578 Permit # 518-A

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

Worker's Compensation Certificate:

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

Sally Andreen — Signature of Well Driller - no proxies

5-25-95 — Date:

Insurance Carrier: Superior National

Policy #: WCP 60234-B Expiration Date: 9-23-95

FOR OFFICE USE ONLY

Permit Approval: [signature] Date: 6/14/95

Fee: $263.00 Date: 6-6-95 Receipt: 168343

Initial Inspection: _____ Date: _____

Final Inspection: _____ Date: _____

APPENDIX J

HUMBOLDT COUNTY DIVISION OF ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT
WELL PERMIT APPLICATION

RECD JUL 1 1 1995

Facility ID # 12518 Permit # 518-B

Facility Name: Former Specialty Mill Site

Site Address: 2000 Foster Avenue, Arcata, CA 95521

Site Owner: Eel River Sawmills, Inc. Telephone: 725-6911

Address: 1053 Northwestern Ave, Fortuna, CA 95540 AP#: 505-161-11

RP Name: Dennis Scott Telephone: 725-6911

Address: 1053 Northwestern Ave, Route 1, Box 459-A, Fortuna, CA 95540

√Consultant: SHN Consulting Engineers and Geologists Telephone: 441-8355

Address: 812 West Wabash Ave, Eureka, CA 95501 Reg.#/Type:

Driller: All Terrain Exploration Drilling Telephone: (916) 991-2995

Address: P.O. Box 747, Pleasant Grove, CA 95668-0747 C-57 Lic.#: 437836

# On-site		# Offsite	
Wells 1	Borings	Wells	Borings

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

Well Type: ☐ Monitoring Well ☐ Injection Well ☐ Vapor Extraction ☐ Geologic Boring
☐ Extraction Well ☒ Piezometer ☐ Vapor Point ☐ Soil Gas Survey
☐ Vadose Well ☐ Cathodic Protection ☐ Temporary Well Point* * Specify type
Other (specify):

Investigation Type: ☒ Site Assessment ☐ Disposal Practice ☐ UST
☐ Surface Contamination ☐ Surface Impoundment ☐ AST
Other (specify):

Investigation Phase: ☐ Initial ☒ Subsequent ☐ Remediation

Suspected Contaminants: petroleum hydrocarbon substances

Encroachnent/Coastal Zone Permit Required (Y/N) N Construction Detail Attached Y

Total Depth: 13'
Seal Depth: 0 - 6.5'
Screen Interval: 7 - 12.75
Bore Diameter: 8"
Casing Diameter: 2"
Drilling Method: HSA
Installed on 6/22/95

A scaled well construction detail illustrating depth of blank, screen, sanitary and surface seals, and pack size, type and thicknesses; site plan illustrating boring/well locations and buried utilities; a copy of the NCRWQCB approval letter for the workplan (if non-LOP), legal Right-of-Entry, site plan, off site well address, encroachment permit, etc. shall be submitted with this application. Well identification number and type shall be affixed to the exterior surface of the security structure. In addition, all wells must include an identification attached to the interior surface as follows:1) Well ID No. 2) Well Type 3) Well Depth 4) Casing Diameter 5) Screened Interval. Please note well permits cannot be processed without this information.

Disposal/Containment for Soil Cuttings: 55-gallon steel drum

Disposal/Containment for Rinsate: —

Disposal/Containment for Development Water: —

HUMBOLDT COUNTY DIVISION OF ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT

WELL PERMIT APPLICATION

Facility ID # 12518 Permit # 518-B

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

Worker's Compensation Certificate:

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

Sally Andreen
Signature of Well Driller - no proxies

10/26/95
Date:

Insurance Carrier: Superior National

Policy #: WCP 60834 B Expiration Date: 9-23-95

FOR OFFICE USE ONLY

Permit Approval: Terri L. Haller Date: 7/5/95

Fee: $51.00 Date: 6/29/95 Receipt: 17502

Initial Inspection: _____ Date: _____

Final Inspection: _____ Date: _____

APPENDIX K

SHN
CONSULTING ENGINEERS & GEOLOGISTS

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

Reference: 930121.100

April 11, 1996

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: FIRST QUARTER 1996 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

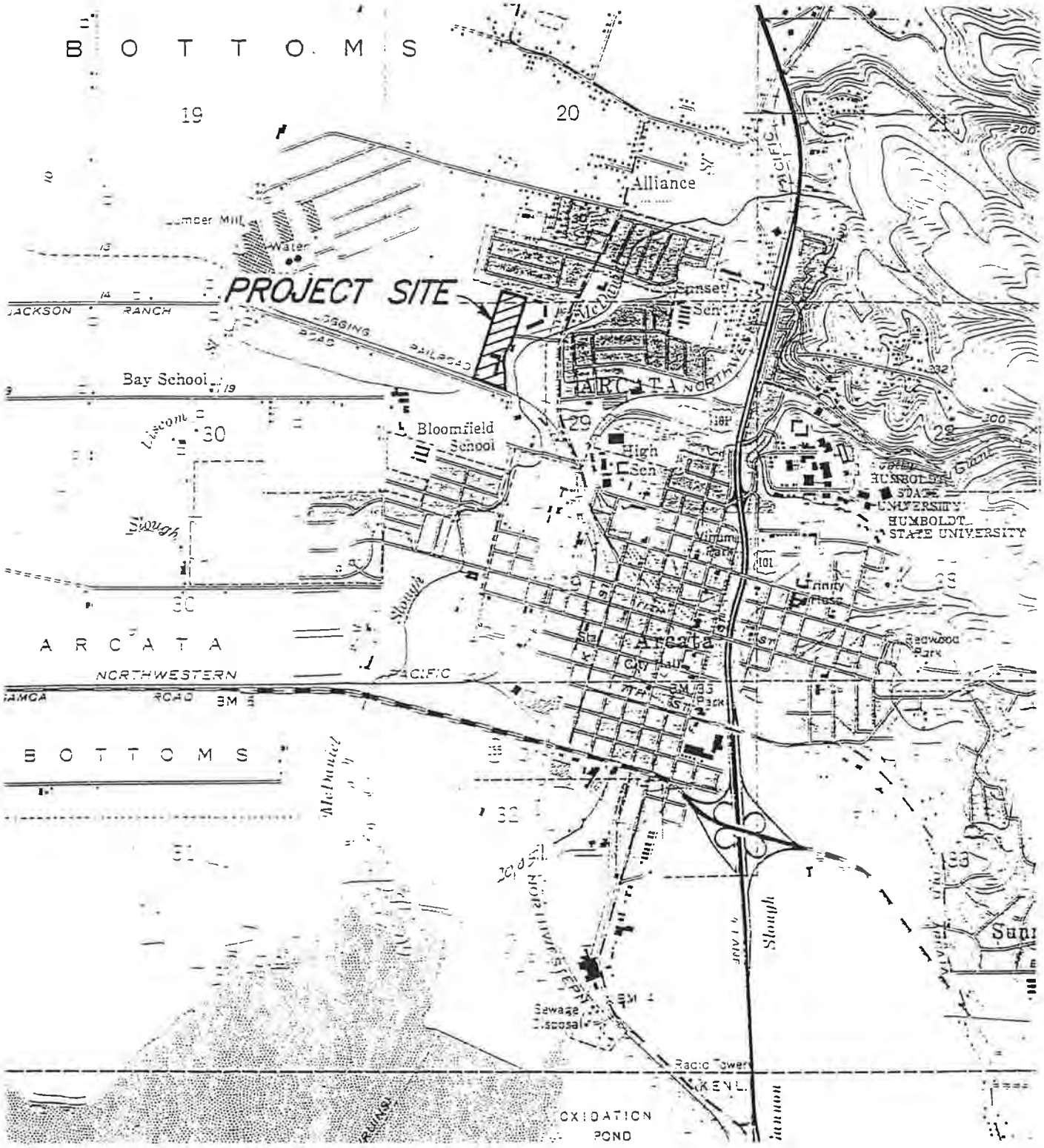
This First Quarter, 1996 monitoring report is being provided on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995 letter to ERS (Appendix A). The report summarizes groundwater level and groundwater sampling data collected during December 1995, and January and February 1996. Groundwater monitoring well quarterly sampling was conducted in February 1996. Field notes and certified laboratory analytical reports follow in the attached Appendices B and C, respectively. Topographic surveying by SHN, in December 1995, for an area wide project, revealed an error in the City of Arcata benchmark elevation used to originally calculate site elevation. All site elevations and groundwater monitoring well elevations have been adjusted to the correct elevation.

Table 1 is a summary of the groundwater elevations measured at MW-1, M-2, MW-3, MW-4, and P-1 during this reporting period.

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	12/20/95	2.78	23.91
MW-2	12/20/95	3.85	22.19
MW-3	12/20/95	14.78	9.665
MW-4	12/20/95	5.11	22.61
P-1	12/20/95	10.39	18.18

APPENDIX K



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALFORNIA

VICINITY MAP

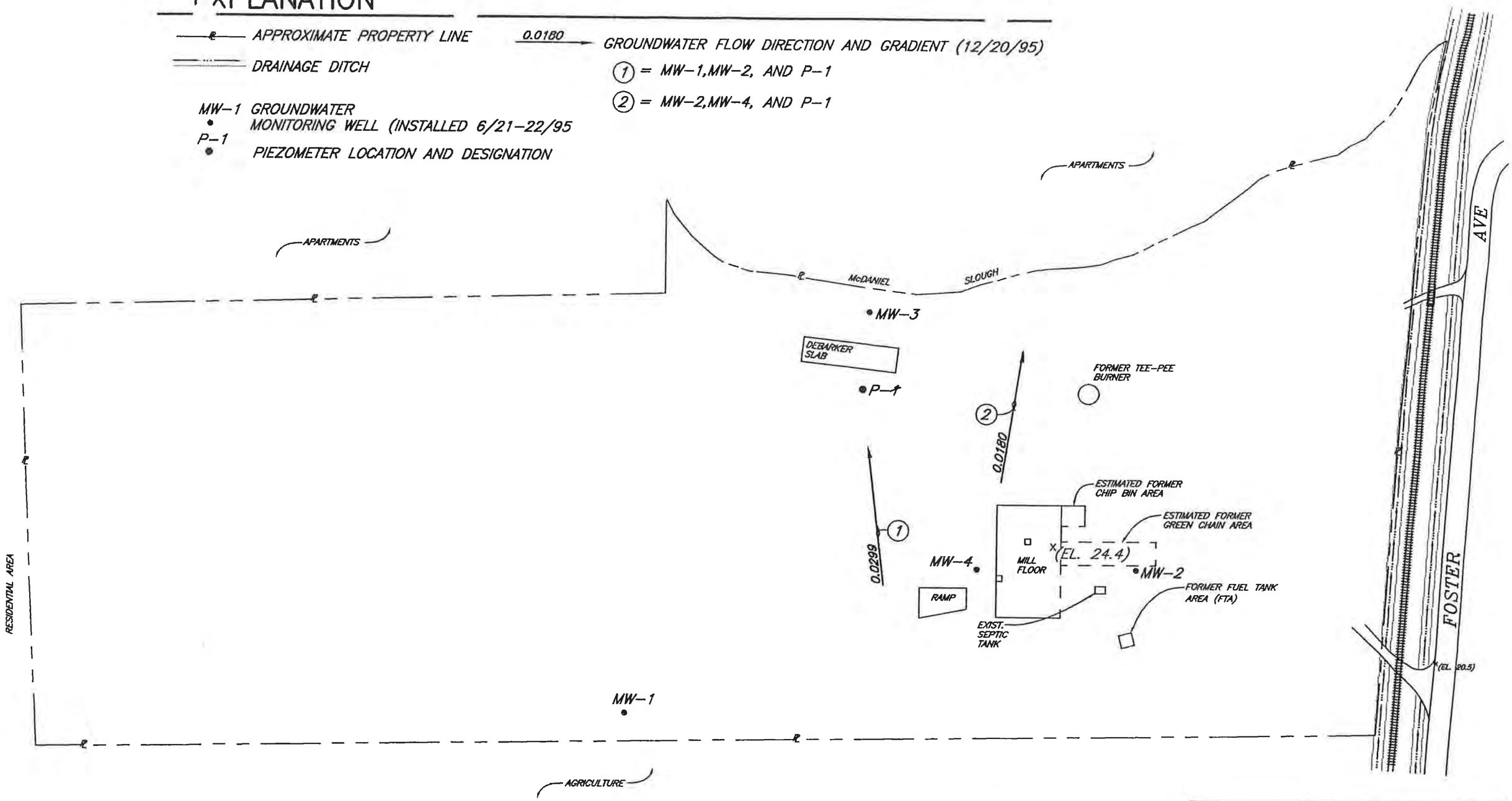
SHN

SHN 930121.100
MARCH, 1996
FIGURE 1

TABLE 1 (CONTINUED) GROUNDWATER ELEVATIONS			
WELL NO.	**DATE**	**DEPTH TO GROUNDWATER (FT)**	**ELEVATION (MSL)**
MW-1	1/17/96	2.43	24.26
MW-2	1/17/96	3.17	22.87
MW-3	1/17/96	10.18	14.265
MW-4	1/17/96	4.02	23.70
P-1	1/17/96	5.51	23.06
MW-1	2/23/96	2.39	24.30
MW-2	2/23/96	3.10	22.94
MW-3	2/23/96	8.00	16.445
MW-4	2/23/96	3.76	23.96
P-1	2/23/96	4.73	23.84

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Based on the data collected, SHN calculated groundwater flow direction and gradient for the months December 1995, and January and February 1996, for two cluster configurations of monitoring wells each month, as indicated on Figures 2, 3, and 4, respectively. The two chosen clusters (MW-1, MW-2, P-1; and, MW-2, MW-4, P-1), provide dissimilar geometric configurations for the same aquifer. A third cluster (MW-1, MW-4, P-1), for the January 1996 data, was used to show the inherent differences in choosing a cluster of groundwater level monitoring points to represent an entire area. Variations in direction and gradient of the groundwater, for a specific cluster are shown on Figure 3.

Groundwater samples for metals only were collected on December 20, 1995, from MW-4, and for all required constituents on February 23, 1996, from MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory



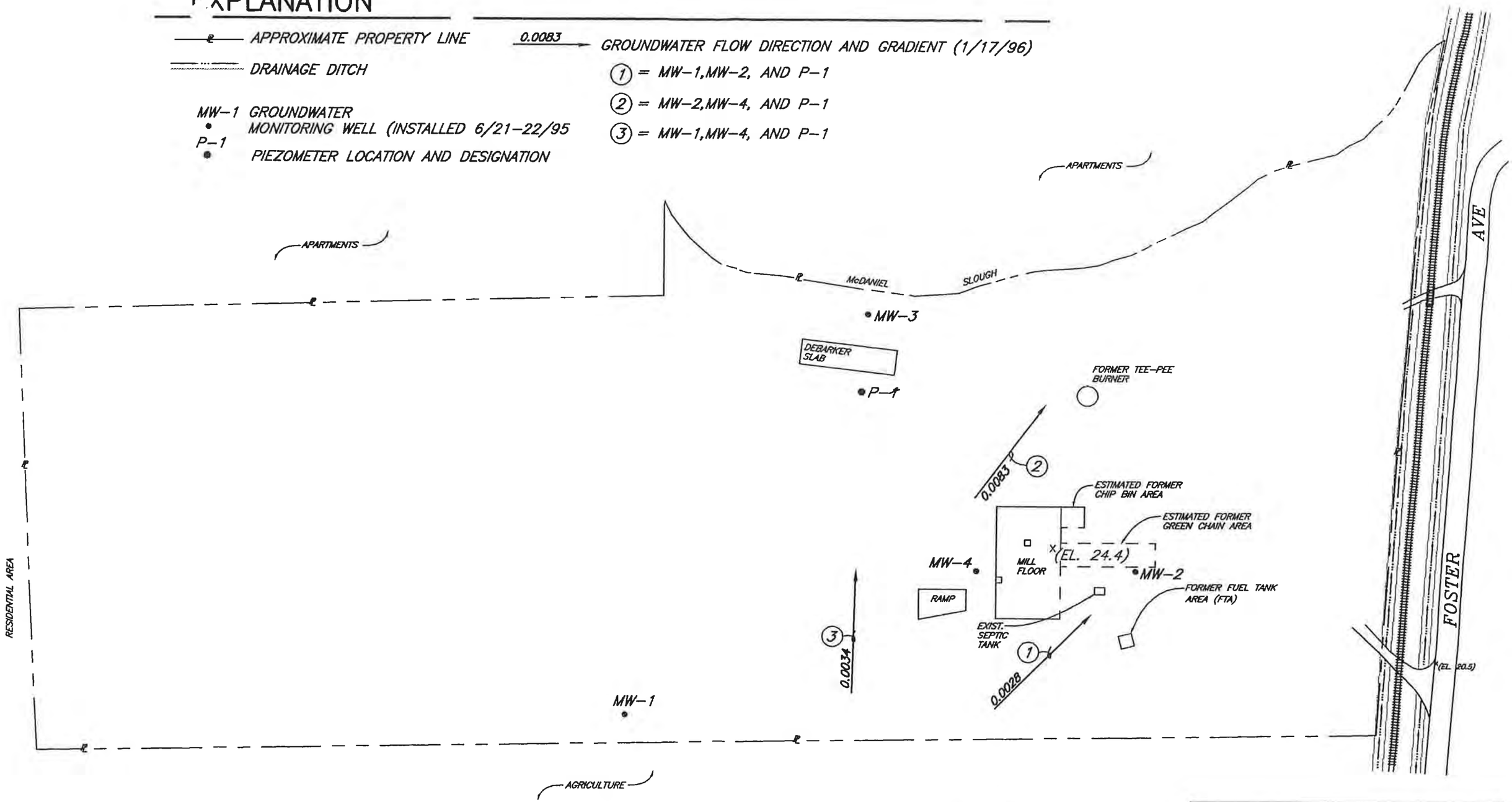
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
APRIL, 1996

FIGURE **2**

930121P2



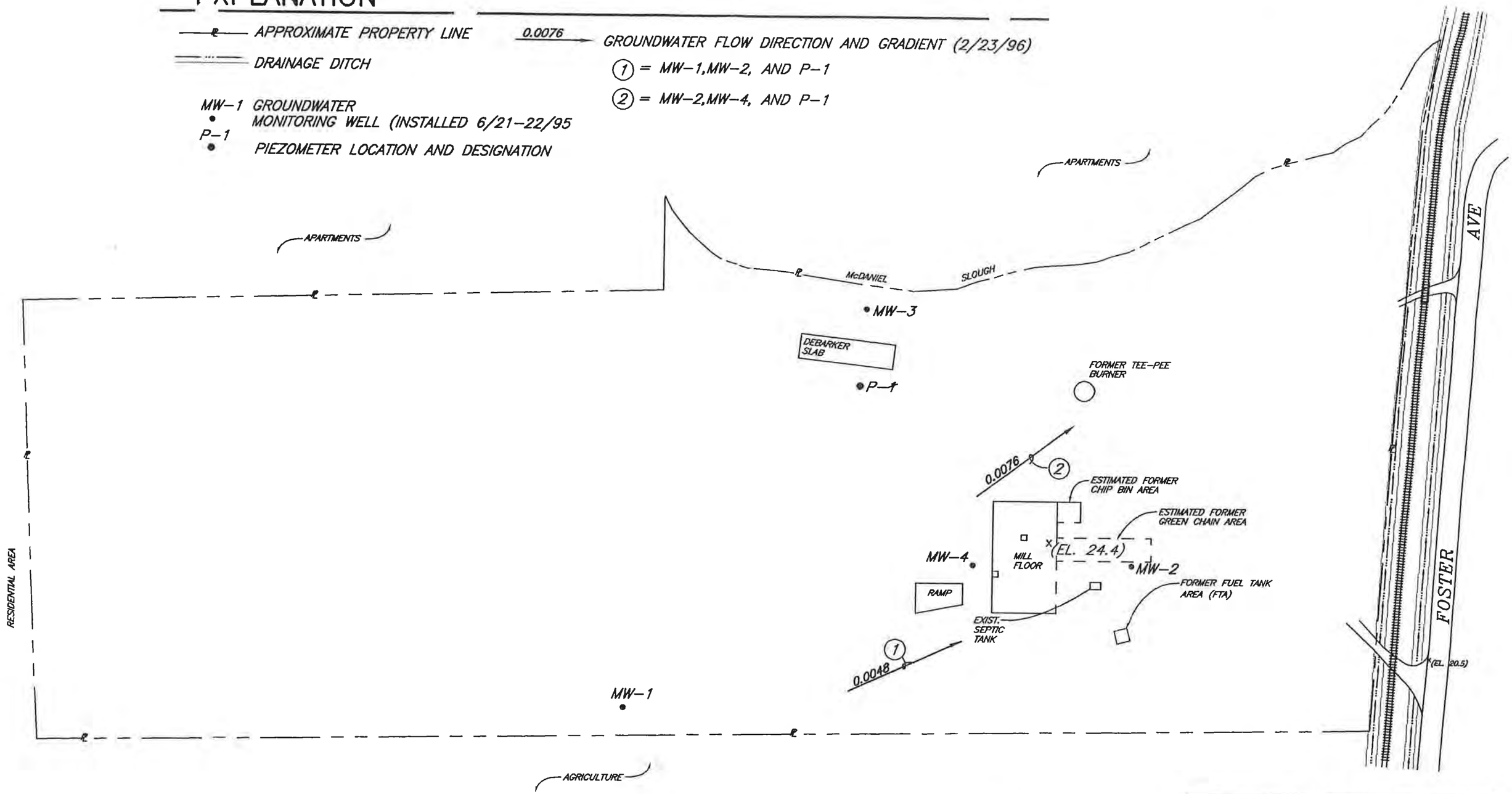
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
APRIL, 1996

FIGURE 3

930121P3



SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
APRIL, 1996

FIGURE **4**

930121.24

supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. A summary of the analytical results is presented in Table 2. See Appendix C for analytical results and chain-of-custody documentation.

Groundwater analytical results indicate that no petroleum hydrocarbons are detectable, at reporting limits, except in MW-2 (TPHD, 182 ug/L). Groundwater contamination at well MW-2 will be monitored in future sampling events. Dissolved metals of concern are nondetectable at reporting limits or are all below California drinking water standards (maximum contaminant levels). Tannins and lignins were detected, at low, non-regulated levels, in all wells, and do not pose a threat to groundwater quality.

To ensure the reproducibility of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected for every ten groundwater samples. This blind sample was "paired" with a regularly scheduled sample, so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Metals[a] (mg/L)	Tannins & Lignins (mg Tannin/L)
MW-4	12/20/95	---	---	---	---	Zn, 0.020	---
MW-1	2/23/96	<0.50	<50	<50	<500	Zn, 0.049	0.88
MW-2		<0.50	<50	180	<500	<0.020	1.1
MW-3		<0.50	<50	<50	<500	Zn, 0.031	4.5
MW-4		<0.50	<50	<50	<500	Zn, 0.17	2.1
QC-1/MW-3		---	---	<50	<500	---	---
QC-2/MW-2		<0.50	<50	<50	---	---	---

[a] Chromium (Cr), Lead (Pb), Nickel (Ni), Zinc (Zn)--see individual lab reports
QC-1 = Quality Control Sample
--- = not sampled

SHN CONSULTING ENGINEERS & GEOLOGISTS

Quarterly monitoring and reporting will continue, for these existing monitoring wells and piezometer P-1. Monthly water level measurements in all monitoring wells and P-1 will be continued as requested by the Humboldt County Division of Environmental Health (HCDEH).

A work plan for further site subsurface investigation and remedial action was submitted by SHN on behalf of ERS, on March 29, to HCDEH for review.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

Martin E. Lay, P.E.
Project Manager

MEL:ls
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

APPENDIX A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

APPENDIX B

FIELD DATA

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.10V
PAGE 1 of 1

PROJECT NAME ERS Foster Ave.	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 2-23-96	DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Quarterly Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Overcast to rain	TECHNICIAN David R. Pain	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0744. Then I took water levels deconing the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Then I purged mw-1, mw-3, mw-2 and mw-4 with a 2" Teflon bailer in this order. I de-coned the bailer after each well by scrubbing it with liquinox then rinsed it with DI water. All purge water and de-con water was put into 1 55 gal. drum and labeled accordingly. The drum is stored by mw-1. Then I sampled mw-1, mw-3 mw-2 and mw-4 in this order with a disposable bailer with the Tri-pod and reel. Left site for NCL at 1335.

Mileage 28 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Pain

JOB NO.: 93012.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave. Arcata

Total Depth	WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
14.89	P-1	6/27/95 DRP	28.57	10.68	17.89
14.78	mw-1		26.69	6.40	20.29
12.05	mw-2		26.04	6.40	19.64
25.90	mw-3		24.445	11.55	12.895
14.54	mw-4	↓	27.72	8.06	19.66
	mw-1	12/20/95 DRP	26.69	2.78	23.91
	mw-2		26.04	3.85	22.19
	mw-3		24.445	14.78	9.665
	mw-4		27.72	5.11	22.61
	P-1	↓	28.57	10.39	18.18
	mw-1	1/17/96 DRP	26.69	2.43	24.26
	mw-2		26.04	3.17	22.87
	mw-3		24.445	10.18	14.265
	mw-4		27.72	4.02	23.70
	P-1	↓	28.57	5.51	23.06
	mw-1	2/23/96 DRP	26.69	2.39	24.30
	mw-2		26.04	3.10	22.94
	mw-3		24.445	8.00	16.445
	mw-4		27.72	3.76	23.96
	P-1	↓	28.57	4.73	23.84

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	2-23-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lains
WELL NO.	MW-1	ELEVATION	
TOTAL DEPTH	14.78	WATER	
DEPTH		ELEVATION	
TO WATER	2.39		

HT OF WATER COLUMN 12.39 X(0.~~66~~ .16)=CASING VOL 1.98 x 3 = 5.95

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
2.39	0844	0846	2 gal.	3~~6~~9	5~~3~~.0°	6.55
		0855	4 gal.	367	53.6°	6.49
		0901	6 gal.	365	53.4°	6.47

TOTAL 6.0 gal.

INITIAL WATER VOLUME 2.0 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1220

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 2.35 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	2-23-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-2	ELEVATION	
TOTAL DEPTH	12.05	WATER	
DEPTH		ELEVATION	
TO WATER	3.10		

HT OF WATER COLUMN _____ X(0.~~66~~ .16)=CASING VOL 1.43 x 3 = 4.29

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
3.10	1032	1034	1.50 gal.	406	56.2°	6.64
		1040	3 gal.	369	55.3°	6.44
		1048	4.50 gal.	353	55°	6.34
		1053	6 gal.	351	54.9°	6.29
		1058	7.50 gal.	350	55°	6.28

TOTAL 7.5 gal.

INITIAL WATER VOLUME 1.4 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1315

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + lign., TPHD/MO

LABORATORY NCL

REMARKS QC-2 TPHG/BTEX

Recharged to 3.05 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	2-23-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-3	ELEVATION	
TOTAL DEPTH	25.90	WATER	
DEPTH		ELEVATION	
TO WATER	8.00		

HT OF WATER COLUMN 17.90 X(0.~~66~~ .16)=CASING VOL 2.86 x 3 = 8.59

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
8.00	0921	0927	3 gal.	806	55.6°	6.79
Empty		0937	4.5 gal.	801	56.9°	6.80
Empty	0952	0956	6 gal.	792	58.4°	6.78
Empty	1011	1015	7 gal.	802	57.8°	6.87

TOTAL 7.0 gal.

INITIAL WATER VOLUME 2.9 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1250

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + Lign., TPHD/mo

LABORATORY NCL

REMARKS QC-1 TPHD/mo

Recharged to 11.07 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	2-23-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lains
WELL NO.	MW-4	ELEVATION	
TOTAL DEPTH	14.54	WATER	
DEPTH		ELEVATION	
TO WATER	3.76		

HT OF WATER COLUMN _____ X(0.~~66~~ .16)=CASING VOL 1.73 x 3 = 5.17

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
3.76	1117	1119	2 gal.	350	55.8°	6.50
		1125	4 gal.	357	55.7°	6.50
		1130	6 gal.	360	55.8°	6.45

TOTAL 6 gal.

INITIAL WATER VOLUME 1.7 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1330

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 3.73 at sampling time

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459-A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marby Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

PROJECT INFORMATION
Project Number: 93012.100
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX	Tann. + Lign.	Dissolved Metals	TPHD/MO
	MW-1	2/23/96	1220	GW	b	9	3	2	3	7
	MW-3		1250							
	MW-2		1315							
	MW-4		1330							
	QC-1		—							
	QC-2	↓	—	↓						
10							X	X	X	X
6							X	X	X	X
6							X	X	X	X
6							X	X	X	X
1										X
3							X			

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Intact/cold
+1 TB
Metals to be tested:
Cr, Pb, Ni, Zn.

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Lain David R. Lain	1343 2/23/96	Laura Miller	2/23/96 1551

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 2

PROJECT NAME: ERS Specialty Mill	CLIENT/OWNER: Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO: 1	
GENERAL LOCATION OF WORK: Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE	DATE: 1-17-96	DAY OF WEEK: Wednesday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER: Mark Lay	
TYPE OF WORK: Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER: Semi-clear	TECHNICIAN: David R. Paine	
-	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 1128. Then I took water levels in this order MW-1, P-1, MW-3, MW-2 and MW-4. I de-caned the sounder after each well by scrubbing it with liquinox then rinsed it with DI water.

P-1, MW-2 and MW-4 all had ant colonyes in them. P-1 was the worst with ants all the way down the inside of the 2" PVC pipe.

Left site at 1203.

Mileage 22 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

GROUNDWATER ELEVATIONS

JOB NO.: 93013.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave. Arcata

Total Depth	WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
14.89	P-1	6/27/95 DRP	28.57	10.68	17.89
14.78	mw-1		26.69	6.40	20.29
12.05	mw-2		26.04	6.40	19.64
25.90	mw-3		24.445	11.55	12.895
14.54	mw-4		27.72	8.06	19.66
	mw-1	12/20/95 DRP	26.69	2.78	23.91
	mw-2		26.04	3.85	22.19
	mw-3		24.445	14.78	9.665
	mw-4		27.72	5.11	22.61
	P-1		28.57	10.39	18.18
	mw-1	1/17/96 DRP	26.69	2.43	24.26
	mw-2		26.04	3.17	22.87
	mw-3		24.445	10.18	14.265
	mw-4		27.72	4.02	23.70
	P-1		28.57	5.51	23.06

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 4

PROJECT NAME	CLIENT/OWNER: Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO: 1	
GENERAL LOCATION OF WORK: Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE: Dennis Scott	DATE: 12-20-95	DAY OF WEEK: Wednesday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER: Marty Lay	
TYPE OF WORK: Water levels + water sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER: Clear	TECHNICIAN: David R. Paine	
-	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 1250. Then I took all water levels de-coning the sounder after each well by scrubbing it with liquinox then rinsed it with DI water. P-1, MW-2, and MW-4 all had an ant colony in their standpipe and inside the 2" PVC casing. Then I purged MW-4 with a 2" Teflon bailer. I de-coned the bailer after purging MW-4 by scrubbing it with liquinox then rinsed it with DI water. All purge water was put into 5 gal. buckets and then dumped on the cement slab where the building used to be. Then I sampled MW-4. Left site for NCL at 1430.

Mileage 27 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

GROUNDWATER ELEVATIONS & KEYS

JOB NO.: 93012 '00

CLIENT: Eel River Sawmills

LOCATION: Foster Ave. Arcata

Total Depth	WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
14.89	P-1	6/27/95 DRP		10.68	
14.78	mw-1			6.40	
12.05	mw-2			6.40	
25.90	mw-3			11.55	
14.54	mw-4			8.06	
	mw-1	12/20/95 DRP		2.78	
	mw-2			3.85	
	mw-3			14.78	
	mw-4			5.11	
	P-1			10.39	

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	12-20-95
CLIENT	Eel River Sawmill	SAMPLER	David R. Paine
WELL NO.		ELEVATION	
TOTAL DEPTH	14.54	WATER	
DEPTH		ELEVATION	
TO WATER	5.11		

HT OF WATER COLUMN 9.43 X(0.~~66~~ .16)=CASING VOL 1.51 x 3 = 4.53

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
5.11	1335	1337	1.50 gal.	461	60.8°	6.62
		1341	3 gal.	478	59.5°	6.56
		1346	4.50 gal.	438	59.2°	6.46
		1350	6 gal.	487	59.1°	6.50

TOTAL 6 gal.

INITIAL WATER VOLUME 1.5 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1420

SAMPLE ANALYSIS Dissolved metals Cd, Cr, pb, Ni, Zn

LABORATORY NCL

REMARKS Recharged to 5.18 at sampling time

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Marty Lay
Results & Invoice to: SHN
Address: 812 W. Wabash Ave.
Eureka Ca. 95501
Phone: 441-8855
Copies of Report to:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: Dissolved metals, Cd, Cr, Pb, Ni, Zn
	MW-4	12/20/95	1420	GW		3	X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_4O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
intact/cold
Hold onto unfiltered part of sample - will need to run total metals later on.

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1440 12/20/95		12/21/95 1440

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

APPENDIX C

ANALYTICAL RESULTS

APPENDIX K

NORTH COAST LABORATORIES LTD

REC'D MAR 07 1996

Date: 03/04/96 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 96-02-467

INVOICE # 60050202

Attn: Dennis Scott

WORK ID: 930121.100/ERS Speciality Mil

REPORT CERTIFIED BY

Roxanne Kohl
Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
01	MW-1
01	MW-1/Dissolved
02	MW-3
02	MW-3
02	MW-3
02	MW-3/Dissolved
03	MW-2
03	MW-2
03	MW-2
03	MW-2/Dissolved
04	MW-4
04	MW-4
04	MW-4
04	MW-4/Dissolved
05	QC-1
06	QC-2
07	Blank
08	Lab. Control Sample

Comments:

Sample 03B contains material similar to very degraded or weathered diesel oil.All diesel results reported represent the amount of material in the diesel range of molecular weights only.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		02/27/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Surrogate:						02/27/96	EPA 602
1-chloro-4-fluorobenzen	94.2	N/A	% Rec	1.0		02/27/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		02/27/96	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID

SAMPLE ID: MW-1 FRAC.: 01C COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.88	0.10	mg Tannin/L	1.0		02/27/96	SM 5550B

SAMPLE ID: MW-1/Dissolved FRAC.: 01D COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Chromium	ND	0.0050	mg/L	1.0		02/28/96	EPA 200.7
Lead	ND	0.020	mg/L	4.0		02/29/96	EPA 200.9
Nickel	ND	0.020	mg/L	1.0		02/28/96	EPA 6010
Zinc	0.049	0.020	mg/L	1.0		02/28/96	EPA 200.7

APPENDIX K

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		02/27/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Surrogate:						02/27/96	EPA 602
1-chloro-4-fluorobenzen	93.3	N/A	% Rec	1.0		02/27/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		02/27/96	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 02C COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	4.5	0.20	mg Tannin/L	2.0		02/27/96	SM 5550B

SAMPLE ID: MW-3/Dissolved FRAC.: 02D COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Chromium	ND	0.0050	mg/L	1.0		02/28/96	EPA 200.7
Lead	ND	0.020	mg/L	4.0		02/29/96	EPA 200.9
Nickel	ND	0.020	mg/L	1.0		02/28/96	EPA 6010
Zinc	0.031	0.020	mg/L	1.0		02/28/96	EPA 200.7

APPENDIX K

SAMPLE ID: MW-2 FRAC.: 03A COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		02/27/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Surrogate:						02/27/96	EPA 602
1-chloro-4-fluorobenzen	93.4	N/A	% Rec	1.0		02/27/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		02/27/96	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 03B COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	180	50	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 03C COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.1	0.10	mg Tannin/L	1.0		02/27/96	SM 5550B

SAMPLE ID: MW-2/Dissolved FRAC.: 03D COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Chromium	ND	0.0050	mg/L	1.0		02/28/96	EPA 200.7
Lead	ND	0.020	mg/L	4.0		02/29/96	EPA 200.9
Nickel	ND	0.020	mg/L	1.0		02/28/96	EPA 6010
Zinc	ND	0.020	mg/L	1.0		02/28/96	EPA 200.7

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 04A COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		02/27/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Surrogate:						02/27/96	EPA 602
1-chloro-4-fluorobenzen	97.8	N/A	% Rec	1.0		02/27/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		02/27/96	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 04B COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 04C COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	2.1	0.10	mg Tannin/L	1.0		02/27/96	SM 5550B

SAMPLE ID: MW-4/Dissolved FRAC.: 04D COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Chromium	ND	0.0050	mg/L	1.0		02/28/96	EPA 200.7
Lead	ND	0.020	mg/L	4.0		02/29/96	EPA 200.9
Nickel	ND	0.020	mg/L	1.0		02/28/96	EPA 6010
Zinc	0.17	0.020	mg/L	1.0		02/28/96	EPA 200.7

APPENDIX K

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID

SAMPLE ID: QC-2 FRAC.: 06A COLLECTED: 02/23/96 RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		02/27/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		02/27/96	EPA 602
Surrogate:						02/27/96	EPA 602
1-chloro-4-fluorobenzen	92.8	N/A	% Rec	1.0		02/27/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		02/27/96	EPA5030GCFID

SAMPLE ID: Blank FRAC.: 07A COLLECTED: N/A RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		02/26/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		02/26/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		02/26/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		02/26/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		02/26/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		02/26/96	EPA 602
Surrogate:						02/26/96	EPA 602
1-chloro-4-fluorobenzen	95.2	N/A	% Rec	1.0		02/26/96	EPA 602
Chromium	ND	0.0050	mg/L	1.0		02/28/96	EPA 200.7
Lead	ND	0.020	mg/L	4.0		02/29/96	EPA 200.9
Nickel	ND	0.020	mg/L	1.0		02/28/96	EPA 6010
TPHC Gasoline/water	ND	50	ug/L	1.0		02/26/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	02/27/96	02/29/96	EPA3510GCFID

Date: 03/04/96 REPORT
Work Order: 96-02-467
Invoice #: 60050202

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	ND	0.10	mg Tannin/L	1.0		02/27/96	SM 5550B
Zinc	ND	0.020	mg/L	1.0		02/28/96	EPA 200.7

SAMPLE ID: Lab. Control Sample FRAC.: 08A COLLECTED: N/A RECEIVED: 02/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	73.8	N/A	% Rec	1.0		02/27/96	EPA 602
Benzene	94.1	N/A	% Rec	1.0		02/27/96	EPA 602
Toluene	96.4	N/A	% Rec	1.0		02/27/96	EPA 602
Ethylbenzene	94.2	N/A	% Rec	1.0		02/27/96	EPA 602
m,p Xylene	91.3	N/A	% Rec	1.0		02/27/96	EPA 602
o Xylene	92.0	N/A	% Rec	1.0		02/27/96	EPA 602
Surrogate:						02/27/96	EPA 602
1-chloro-4-fluorobenzen	97.0	N/A	% Rec	1.0		02/27/96	EPA 602
Chromium	101	N/A	% Rec	1.0		02/28/96	EPA 200.7
Lead	101	N/A	% Rec	4.0		02/29/96	EPA 200.9
Nickel	103	N/A	% Rec	1.0		02/28/96	EPA 6010
TPHC Gasoline/water	100	N/A	% Rec	1.0		02/27/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	74.7	N/A	% Rec	1.0	02/27/96	02/29/96	EPA3510GCFID
TPHC - Motor Oil	86.9	N/A	% Rec	1.0	02/27/96	02/29/96	EPA3510GCFID
Tannin and Lignin	100	N/A	% Rec	1.0		02/27/96	SM 5550B
Zinc	107	N/A	% Rec	1.0		02/28/96	EPA 200.7

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9602467

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459-A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marky Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__'
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Specialty Mill
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX	ANALYSIS: Tom. 4 Lign	ANALYSIS: Dissolved Metals	ANALYSIS: TPHd/mo
1	MW-1	2/23/96	1220	GW	b	9	X	X	X	X
2	MW-3		1250				X	X	X	X
3	MW-2		1315				X	X	X	X
4	MW-4		1330				X	X	X	X
5	QC-1		—							X
6	QC-2	↓	—	↓			X			

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_4O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Intact/Cold
+1 TB
Metals to be tested:
Cr, Pb, Ni, Zn.

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Pain David R. Pain	1343 2/23/96	Xanna Miller	2/23/96 1351

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

APPENDIX K

REC'D JAN 10 1996

NORTH COAST LABORATORIES LTD

Date: 01/05/96 REPORT Page 1 of 2

REPORT Selvage, Heber and Nelson
TO 812 West Wabash Avenue
Eureka, CA 95501

WORK ORDER 95-12-428

INVOICE # 60049165

Attn: Marty Lay

WORK ID: 930121.00/ERS Specialty Mill

REPORT CERTIFIED BY

Michelle Selvage
Laboratory Supervisor(s)

Michelle Donstad
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-4
02	Blank
03	Lab. Control Sample

Comments:

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 01A COLLECTED: 12/20/95 RECEIVED: 12/20/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	ND	0.010	mg/L	1.0		01/04/96	EPA 200.7
| Chromium	ND	0.0050	mg/L	1.0		01/04/96	EPA 200.7
| Nickel	ND	0.020	mg/L	1.0		01/04/96	EPA 200.7
| Zinc	0.020	0.020	mg/L	1.0		01/04/96	EPA 200.7
Lead	ND	0.020	mg/L	4.0		01/04/96	EPA 200.9

SAMPLE ID: Blank FRAC.: 02A COLLECTED: N/A RECEIVED: 12/20/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	ND	0.010	mg/L	1.0		01/04/96	EPA 200.7
| Chromium	ND	0.0050	mg/L	1.0		01/04/96	EPA 200.7
| Nickel	ND	0.020	mg/L	1.0		01/04/96	EPA 200.7
| Zinc	ND	0.020	mg/L	1.0		01/04/96	EPA 200.7
Lead	ND	0.020	mg/L	4.0		01/04/96	EPA 200.9

SAMPLE ID: Lab. Control Sample FRAC.: 03A COLLECTED: N/A RECEIVED: 12/20/95

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 200.7
| Cadmium	103	N/A	% Rec	1.0		01/04/96	EPA 200.7
| Chromium	98.2	N/A	% Rec	1.0		01/04/96	EPA 200.7
| Nickel	97.9	N/A	% Rec	1.0		01/04/96	EPA 200.7
| Zinc	98.1	N/A	% Rec	1.0		01/04/96	EPA 200.7
Lead	110	N/A	% Rec	4.0		01/04/96	EPA 200.9

P. 1 of 1

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9512128

Attention: Marty Lay
Results & Invoice to: SHN
Address: 812 W Wabash Ave
Eureka Ca 95501
Phone: 441 8855
Copies of Report to:

PROJECT INFORMATION

Project Number: 930121.100
Project Name: [illegible]
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE		CONTAINER	(1)	ANALYSIS	[illegible]	[illegible]
	[illegible]	12/12/95	[illegible]	GW						X	X

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

[illegible]

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[illegible]	1440 12/12/95	[illegible]	[illegible]

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

CONSULTING ENGINEERS
& GEOLOGISTS

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Seivage, PE
Kjeff Nelson, PE
Roland S. Johnson, CEG

697

Reference: 930121.100

July 5, 1996

RECEIVED
JUL 1996

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: SECOND QUARTER 1996 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

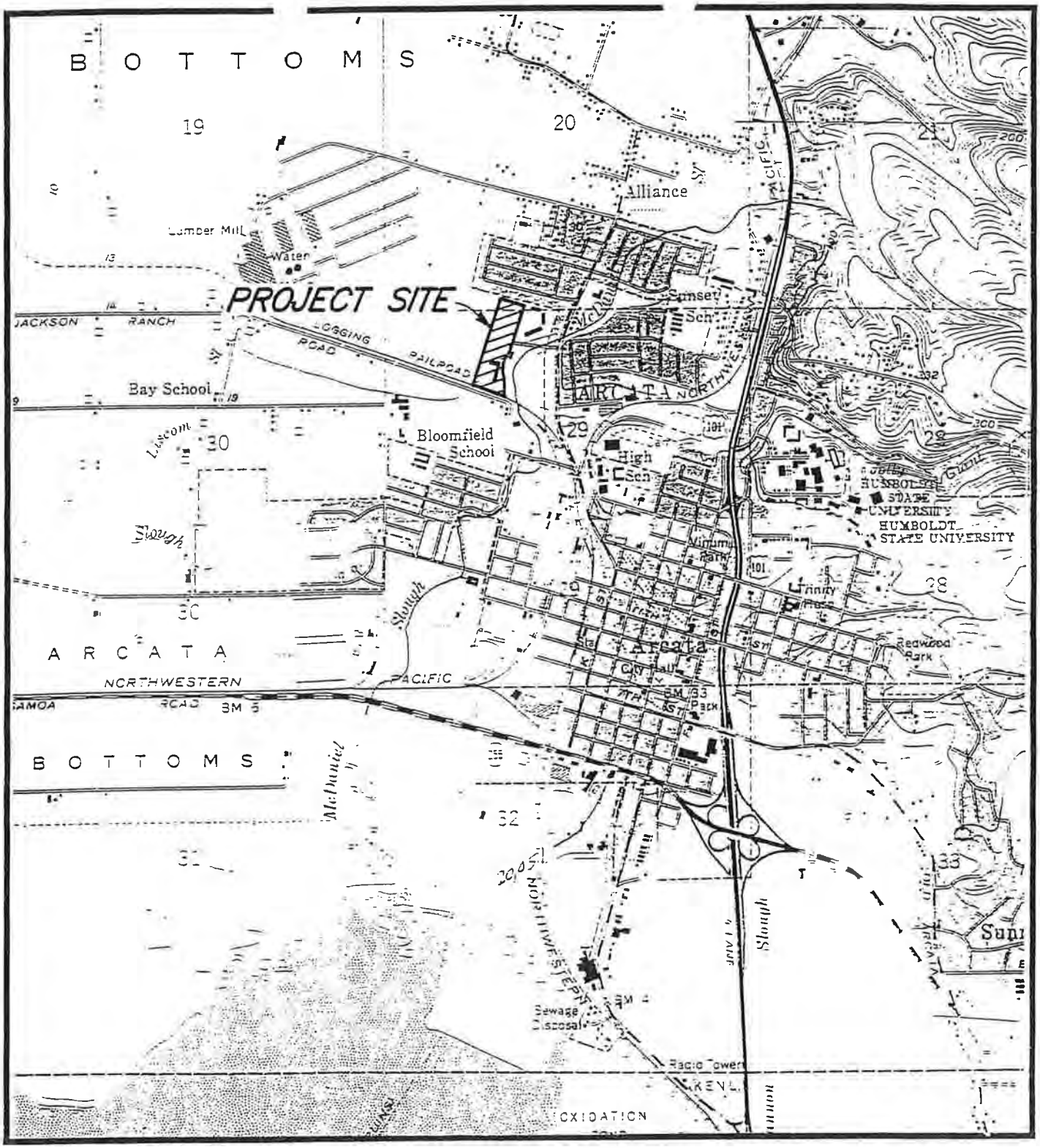
This Second Quarter, 1996 monitoring report is being provided on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995 letter to ERS (Appendix A). The report summarizes groundwater level and groundwater sampling data collected during March , April, and May 1996. Groundwater monitoring well quarterly sampling was conducted in May 1996. Field notes and certified laboratory analytical reports follow in the attached Appendices B and C, respectively.

Table 1 is a summary of the groundwater elevations measured at MW-1, M-2, MW-3, MW-4, and P-1 during this reporting period.

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	3/22/96	3.32	23.37
MW-2	3/22/96	4.82	21.22
MW-3	3/22/96	8.80	15.65
MW-4	3/22/96	6.20	21.52
P-1	3/22/96	8.52	20.05
MW-1	4/29/96	2.95	23.74
MW-2	4/29/96	4.06	21.98

APPENDIX K



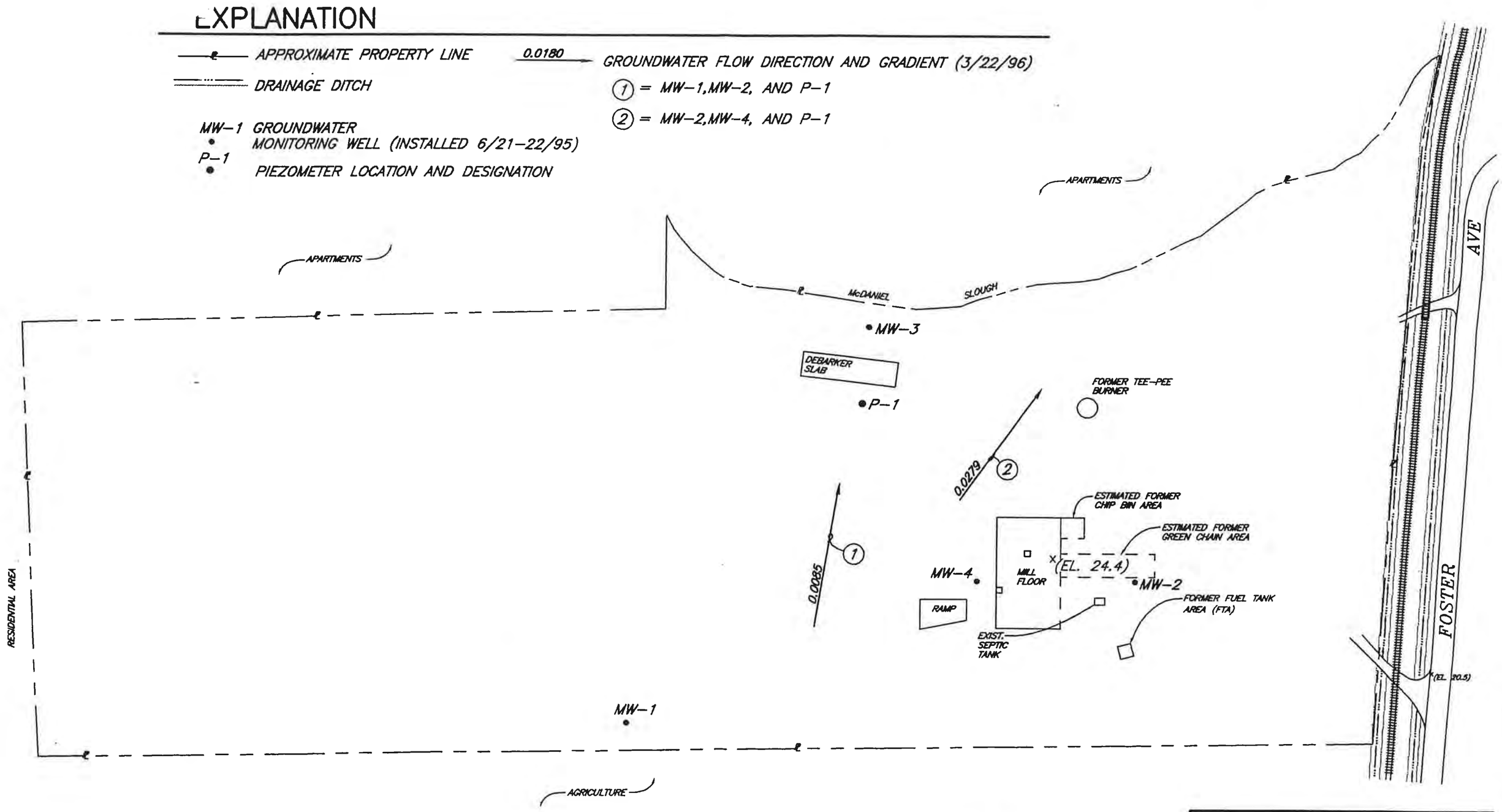
ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100
JUNE 1996
FIGURE 1



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

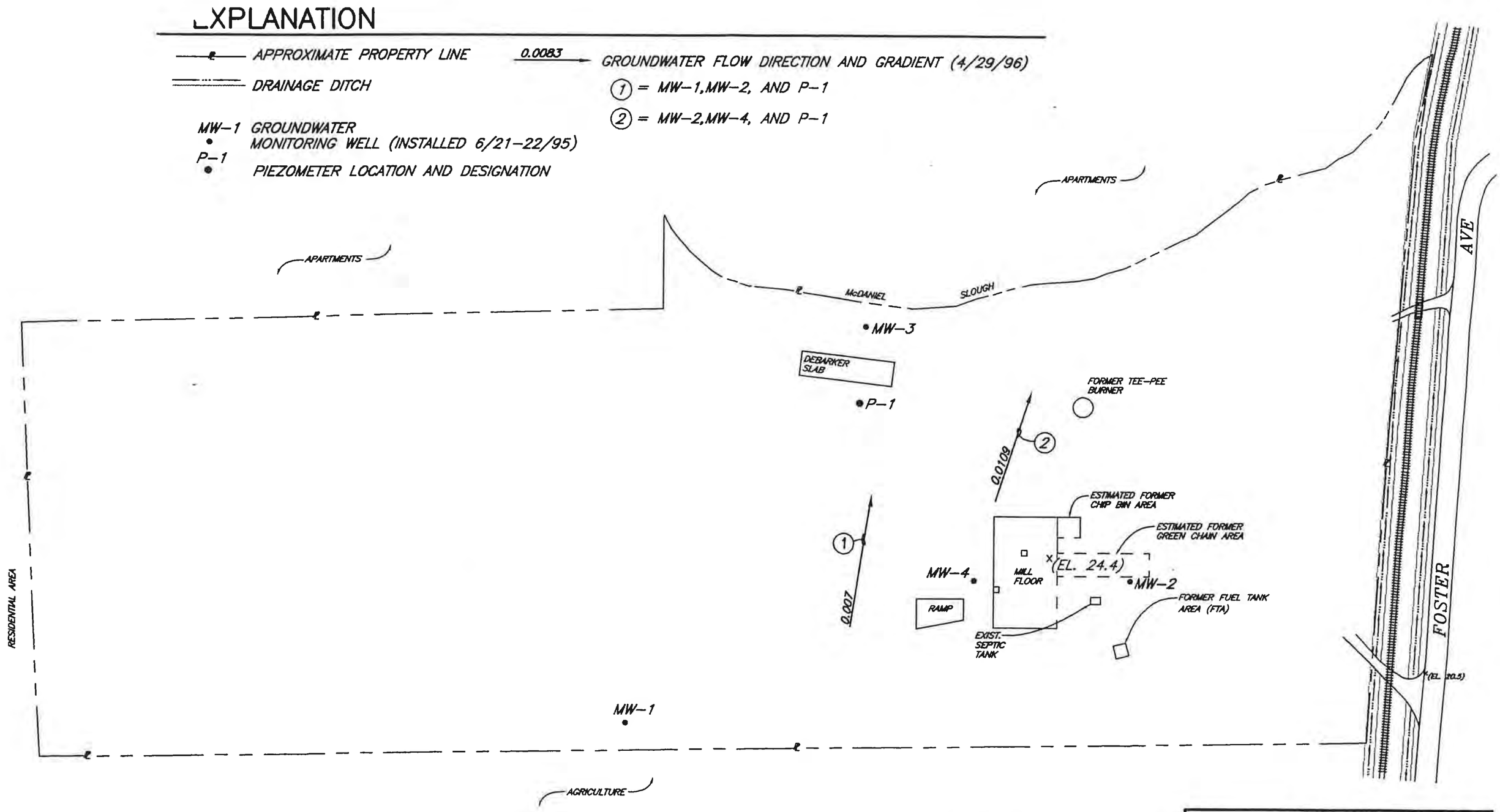
SPECIALTY MILL (FORMERLY
ARCATA, CALIFORNI
APN #505-161-1

GROUNDWATER FLOW DIRECTION
AND GRADIENT

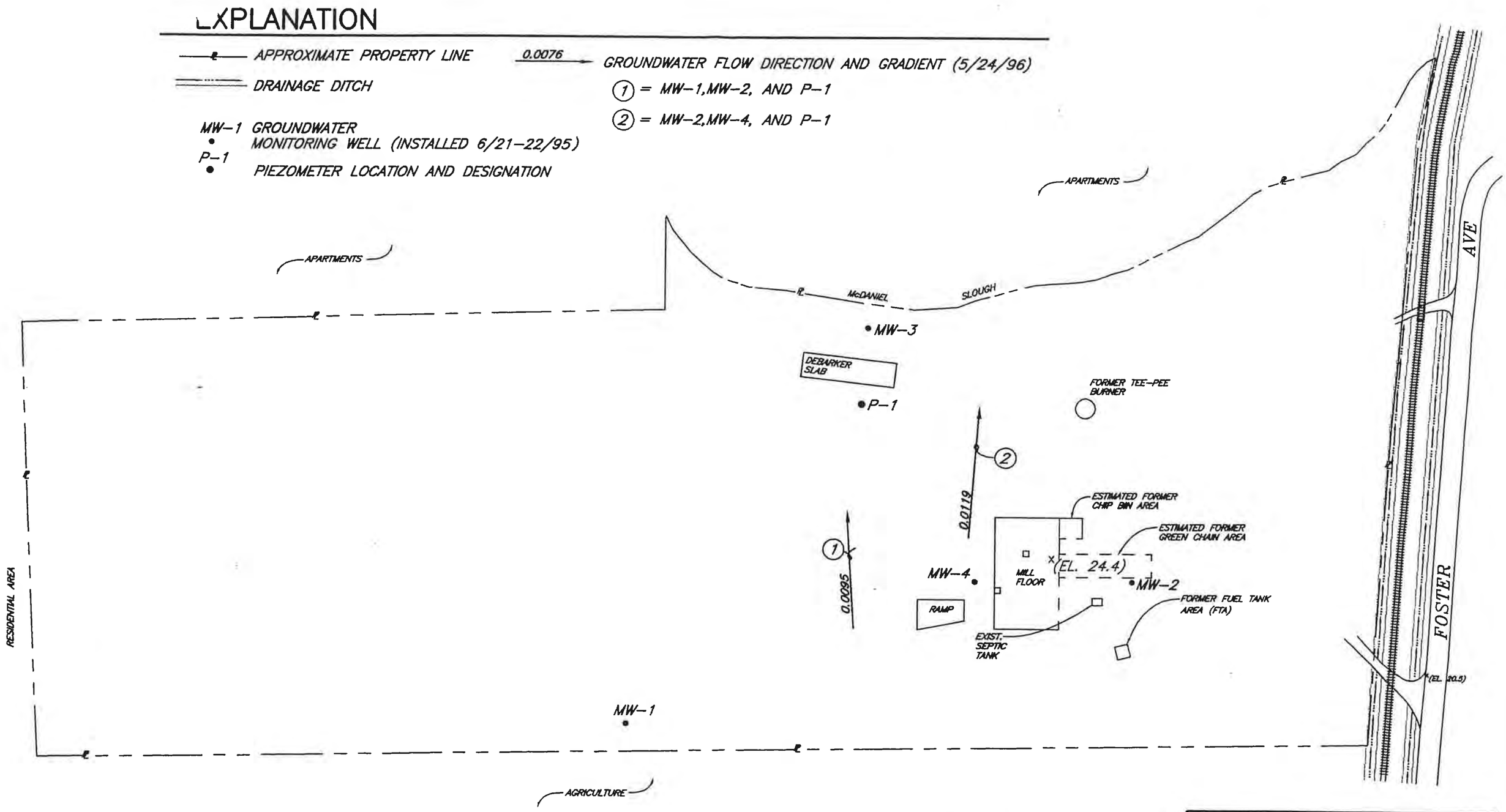
SHN 930121.10
JUNE 199

FIGURE 1

930121F2


EXPLANATION
APPROXIMATE PROPERTY LINE
DRAINAGE DITCH
MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)
P-1 PIEZOMETER LOCATION AND DESIGNATION
0.0083 GROUNDWATER FLOW DIRECTION AND GRADIENT (4/29/96)
(1) = MW-1, MW-2, AND P-1
(2) = MW-2, MW-4, AND P-1
APARTMENTS
APARTMENTS
McDANIEL SLOUGH
MW-3
DEBARKER SLAB
P-1
FORMER TEE-PEE BURNER
0.0109
2
1
0.007
ESTIMATED FORMER CHIP BIN AREA
ESTIMATED FORMER GREEN CHAIN AREA
MW-4
MILL FLOOR
(EL. 24.4)
MW-2
RAMP
FORMER FUEL TANK AREA (FTA)
EXIST. SEPTIC TANK
AVE
FOSTER
(EL. 20.5)
RESIDENTIAL AREA
MW-1
AGRICULTURE
0 50 100 Feet
SCALE: 1" = 100'
ALL LOCATIONS ARE APPROXIMATE
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11
GROUNDWATER FLOW DIRECTION AND GRADIENT
SHN 930121.100
JUNE 1996
FIGURE 3

930121F



SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
JUNE 1996

FIGURE **4**

TABLE 1 (Continued)
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-3	4/29/96	9.41	15.04
MW-4	4/29/96	5.15	22.57
P-1	4/29/96	7.57	21.00
MW-1	5/24/96	4.07	22.62
MW-2	5/24/96	4.58	21.46
MW-3	5/24/96	10.32	14.14
MW-4	5/24/96	6.09	21.63
P-1	5/24/96	9.09	19.48

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Based on the data collected, SHN calculated groundwater flow direction and gradient for the months March, April, and May 1996, for two cluster configurations of monitoring wells each month, as indicated on Figures 2, 3, and 4, respectively. The two chosen clusters (MW-1, MW-2, P-1; and, MW-2, MW-4, P-1), provide dissimilar geometric configurations for the same aquifer.

Groundwater samples were collected on May 24, 1996 for all required constituents from MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. A summary of the analytical results is presented in Table 2. See Appendix C for analytical results and chain-of-custody documentation.

Dale Dell'Osso
Second Quarter 1996 Groundwater Monitoring Report
July 5, 1996
Page 3

Groundwater analytical results indicate that no petroleum hydrocarbons are detectable, at reporting limits, except in MW-2 (TPHD, 110 ug/L). Groundwater contamination at well MW-2 will be monitored in future sampling events. Dissolved metals of concern are nondetectable at reporting limits or are all below California drinking water standards (maximum contaminant levels). Tannins and lignins were detected, at low, non-regulated levels, in all wells, and do not pose a threat to groundwater quality.

To ensure the reproducibility of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected for every ten groundwater samples. This blind sample was "paired" with a regularly scheduled sample, so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Metals (mg/L)	Tannins & Lignins (mg Tannin/L)
MW-1	5/24/96	<0.50	<50	<50	<500	0.020	0.57
MW-2		<0.50	<50	110	<500	Zn,0.34	1.0
MW-3		<0.50	<50	<50	<500	0.020	5.2
MW-4		<0.50	<50	<50	<500	Zn, 0.38	1.7
QC-1/MW-2		<0.50	<50	130	<500	---	---

[a] Chromium (Cr), Lead (Pb), Nickel (Ni), Zinc (Zn)--see individual lab reports
QC-1 = Quality Control Sample
--- = not sampled

Quarterly monitoring and reporting will continue, for these existing monitoring wells and piezometer P-1. Monthly water level measurements in all monitoring wells and P-1 will be continued as requested by the Humboldt County Division of Environmental Health (HCDEH).

Additional site subsurface investigation is scheduled for late June, and overexcavation of investigation delineated soil contaminated areas will follow in late August. Contaminated soil excavated from the site is proposed to be moved, for remedial action, to ERS Mill A in Fortuna, CA., for bioremediation.

ERS has submitted a Report of Waste Discharge (SHN, May 1996), to the Regional Water Quality Control Board, North Coast Region (RWQCB), and HCDEH, that is currently being processed. A Remedial Action Plan will be prepared by SHN and submitted to HCDEH for review within 3 weeks.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS, INC.

Martin E. Lay, P.E.
Project Manager

MEL:ls
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

APPENDIX A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

APPENDIX B

FIELD DATA

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 1

PROJECT NAME ERS Foster Ave.	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 5-24-96	DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Quarterly Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Clear	TECHNICIAN David R. Paine	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc) Martin E. Lay		
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING			

Arrived on site at 0721. Then I took all water levels de-caning the sounder after each well by scrubbing it with liquinox then rinsing it with DE water. Then I purged MW-1, MW-3 MW-4, and MW-2 in this order with a 2" TEFLON Bailer. All purge water from all 4 wells went into the 55 gal. drum located by MW-1 and was labeled accordingly. I de-coned the 2" bailer after purging each well by scrubbing it with liquinox then rinsed it with DI water. Then I sampled MW-1, MW-3, MW-4, and MW-2 in this order. @(-) came out of MW-2. Secured all wells with caps and lids. Left site for NCL at 1256.

Mileage 27 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

GROUND WATER ELEVATIONS

JOB NO. : 930121.1
CLIENT: Eel River Sawmills
LOCATION: Foster Ave., Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	4/29/96 DRP	26.69	2.95	23.74
mw-2		26.04	4.06	21.98
mw-3		24.445	9.41	15.035
mw-4		27.72	5.15	22.57
P-1		28.57	7.57	21.00
mw-1	5/24/96 DRP	26.69	4.07	22.62
mw-2		26.04	4.58	21.46
mw-3		24.445	10.31	14.135
mw-4		27.72	6.09	21.63
P-1		28.57	9.09	19.48

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	5-24-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-1	ELEVATION	
TOTAL DEPTH	14.78	WATER	
DEPTH		ELEVATION	
TO WATER	4.07		

HT OF WATER COLUMN 10.71 X(0.~~66~~ .16)=CASING VOL 1.71 X 3 = 5.14

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
4.07	0815	0817	1.75 gal.	391	55°	6.52
		0824	3.50 gal.	392	55.1°	6.51
		0829	5.25 gal.	389	54.9°	6.42

TOTAL 5.3 gal.

INITIAL WATER VOLUME 1.7 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1200

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 4.09 at sampling time

APPENDIX K
FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	5-24-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lainé
WELL NO.	MW-2	ELEVATION	
TOTAL DEPTH	12.05	WATER	
DEPTH		ELEVATION	
TO WATER	4.58		

HT OF WATER COLUMN 7.47 X(0.~~66~~ .16)=CASING VOL 1.20 x 3 = 3.59

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
4.58	1049	1051	1.25 gal.	304	59.9°	6.27
		1056	2.50 gal.	323	59.8°	6.30
		1102	3.75 gal.	333	59.8°	6.35

TOTAL 3.8 gal.

INITIAL WATER VOLUME 1.2 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1245

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + lign., TPHD/MO

LABORATORY NCL

REMARKS QC-1 TPHG/BTEX and TPHD/MO
Recharged to 4.60 at sampling time

APPENDIX K
FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	5-24-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-3	ELEVATION	
TOTAL DEPTH	25.90	WATER	
DEPTH		ELEVATION	
TO WATER	10.31	.16	

HT OF WATER COLUMN 15.59 X(0.~~66~~)=CASING VOL 2.49 x 3 = 7.48

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
10.31	0859	0903	2.50 gal.	1055	57.8°	6.90
Empty		0915	4.75 gal.	1012	57°	6.90
Empty	0930	0935	5.50 gal.	998	57.1°	7.04
Empty	0950	0952	6 gal.	1030	57.5°	6.98

TOTAL 6 gal.

INITIAL WATER VOLUME 2.5 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1215

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 14.50 at sampling time

APPENDIX K
FIELD SAMPLING LOG

PROJECT # 930121.100 DATE 5-24-96
CLIENT Eel River Sawmills SAMPLER David R. Lain
WELL NO. MW-4 ELEVATION
TOTAL DEPTH 14.54 WATER
DEPTH ELEVATION
TO WATER 6.09
HT OF WATER COLUMN 8.45 X(0.~~66~~.16)=CASING VOL 1.35 x 3 = 4.06

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
6.09	1013	1015	1.50 gal.	382	59.3°	6.45
		1019	3 gal.	375	58.4°	6.46
		1025	4.50 gal.	377	58.4°	6.46

TOTAL 4.5 gal.

INITIAL WATER VOLUME 1.4 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1230
SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO
LABORATORY NCL
REMARKS

Recharged to 6.10 at sampling time

APPENDIX K

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 457A
Fortuna Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka Ca. 95501

PROJECT INFORMATION

Project Number: 730121.100
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*
	MW-1	5/24/96	1200	GW
	MW-3	↓	1210	↓
	MW-4	↓	1230	↓
	MW-7	↓	1245	↓
	WE-1	↓	—	↓

ANALYSIS	CONTAINER	PRESERVATIVE	MW-1	MW-3	MW-4	MW-7	WE-1
			G	G	G	G	A
TPHG / BTEX	1	b	X	X	X	X	X
Tannins + Lignins	2		X	X	X	X	
Dissolved Metals	3		X	X	X	X	
Cd, Cr, Pb, Ni, Zn			X	X	X	X	
TPHd / mo	7		X	X	X	X	X

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

[illegible] + 1 TP ↓

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David P. Paine (signature) David P. Paine	1305 5/24/96	(signature)	[illegible]

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX C

ANALYTICAL RESULTS

APPENDIX K

NORTH COAST
LABORATORIES LTD.

REC'D JUN 17 1996

Date: 06/11/96 REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 96-05-483

INVOICE # 60052056

Attn: Dennis Scott

WORK ID: 930121.100/ERS Specialty Mill

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
01	MW-1
01	MW-1
02	MW-3
02	MW-3
02	MW-3
02	MW-3
03	MW-4
03	MW-4
03	MW-4
03	MW-4
04	MW-2
04	MW-2
04	MW-2
04	MW-2
05	QC-1
05	QC-1
06	Blank
06	Blank
07	Lab. Control Sample
07	Lab. Control Sample

Comments:

Samples 4B & 5B contain material in the diesel range, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Surrogate:						05/30/96	EPA 602
1-chloro-4-fluorobenzen	62.3	N/A	% Rec	1.0		05/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/29/96	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/03/96	06/05/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/03/96	06/05/96	EPA3510GCFID

SAMPLE ID: MW-1 FRAC.: 01C COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		05/31/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		05/31/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		06/03/96	EPA 200.9

SAMPLE ID: MW-1 FRAC.: 01D COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.57	0.10	mg Tannin/L	1.0		06/06/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/29/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Surrogate:						05/29/96	EPA 602
1-chloro-4-fluorobenzen	57.6	N/A	% Rec	1.0		05/29/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/29/96	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/03/96	06/05/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/03/96	06/05/96	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 02C COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		05/31/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		05/31/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		06/03/96	EPA 200.9

SAMPLE ID: MW-3 FRAC.: 02D COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	5.2	0.20	mg Tannin/L	2.0		06/06/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 03A COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/29/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Surrogate:						05/29/96	EPA 602
1-chloro-4-fluorobenzen	69.7	N/A	% Rec	1.0		05/29/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/29/96	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 03B COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/03/96	06/05/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/03/96	06/05/96	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 03C COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		05/31/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		05/31/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Zinc	0.38	0.020	mg/L	1.0		05/31/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		06/03/96	EPA 200.9

SAMPLE ID: MW-4 FRAC.: 03D COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.7	0.10	mg Tannin/L	1.0		06/06/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-2 FRAC.: 04A COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Surrogate:						05/30/96	EPA 602
1-chloro-4-fluorobenzen	69.1	N/A	% Rec	1.0		05/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/30/96	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 04B COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	110	50	ug/L	1.0	06/03/96	06/10/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/03/96	06/10/96	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 04C COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		05/31/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		05/31/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Zinc	0.34	0.020	mg/L	1.0		05/31/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		06/03/96	EPA 200.9

SAMPLE ID: MW-2 FRAC.: 04D COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.0	0.10	mg Tannin/L	1.0		06/06/96	SM 5550B

APPENDIX K

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/30/96	EPA 602
Surrogate:						05/30/96	EPA 602
1-chloro-4-fluorobenzen	73.4	N/A	% Rec	1.0		05/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/30/96	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05B COLLECTED: 05/24/96 RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	130	50	ug/L	1.0	06/03/96	06/10/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/03/96	06/10/96	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/29/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/29/96	EPA 602
Surrogate:						05/29/96	EPA 602
1-chloro-4-fluorobenzen	97.3	N/A	% Rec	1.0		05/29/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/29/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/03/96	06/06/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/03/96	06/06/96	EPA3510GCFID

APPENDIX K

SAMPLE ID: Blank FRAC.: 06B COLLECTED: N/A RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		05/31/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		05/31/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		05/31/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		06/03/96	EPA 200.9
Tannin and Lignin	ND	0.10	mg Tannin/L	1.0		06/06/96	SM 5550B

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	109	N/A	% Rec	1.0		05/29/96	EPA 602
Benzene	92.6	N/A	% Rec	1.0		05/29/96	EPA 602
Toluene	96.8	N/A	% Rec	1.0		05/29/96	EPA 602
Ethylbenzene	98.6	N/A	% Rec	1.0		05/29/96	EPA 602
m,p Xylene	101	N/A	% Rec	1.0		05/29/96	EPA 602
o Xylene	100	N/A	% Rec	1.0		05/29/96	EPA 602
Surrogate:						05/29/96	EPA 602
1-chloro-4-fluorobenzen	101	N/A	% Rec	1.0		05/29/96	EPA 602
TPHC Gasoline/water	99.9	N/A	% Rec	1.0		05/29/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	82.8	N/A	% Rec	1.0	06/03/96	06/06/96	EPA3510GCFID
TPHC - Motor Oil	94.2	N/A	% Rec	1.0	06/03/96	06/06/96	EPA3510GCFID

SAMPLE ID: Lab. Control Sample FRAC.: 07B COLLECTED: N/A RECEIVED: 05/24/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	115	N/A	% Rec	1.0		05/31/96	EPA 6010A
Chromium	101	N/A	% Rec	1.0		05/31/96	EPA 6010A
Nickel	101	N/A	% Rec	1.0		05/31/96	EPA 6010A
Zinc	103	N/A	% Rec	1.0		05/31/96	EPA 6010A
Lead	89.6	N/A	% Rec	4.0		06/03/96	EPA 200.9
Tannin and Lignin	94.2	N/A	% Rec	1.0		06/06/96	SM 5550B

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

P. 1 of 1

LABORATORY NUMBER: 9605A83

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459A
Fortuna Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
811 W. Wabash Ave
Eureka Ca 95501

PROJECT INFORMATION

Project Number: 930121.100
Project Name: ERS Specialty Mill
Purchase Order Number:

	TPHG/BTEX	Tannins + Lignins	Dissolved Metals	Cd, Cr, Pb, Ni, Zn	TPHd/mo
PRESERVATIVE	b				
CONTAINER	9	2	3		7

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*		TPHG/BTEX	Tannins + Lignins	Dissolved Metals	Cd, Cr, Pb, Ni, Zn	TPHd/mo
1	mw-1	5/24/96	1200	GW	6	X	X	X	X	X
2	mw-3	↓	1215	↓	6	X	X	X	X	X
3	mw-4	↓	1230	↓	6	X	X	X	X	X
4	mw-2	↓	1245	↓	6	X	X	X	X	X
5	WC-1	↓	—	↓	4	X				X

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[X] STD (2–3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By: _/_/_
Final Report: FAX [ ] Verbal [ ] By: _/_/_

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Tubed/Cold + 1 TB
↓ ↓

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David P. Paine David P. Paine	1305 5/24/96	[illegible signature]	1340 5/24/96

SAMPLE DISPOSAL
[X] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

SHN
CONSULTING ENGINEERS & GEOLOGISTS

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Salvage, PE
K. Jeff Nelson, PE
Roland S. Johnson, Jr., C.E.G.

Reference: 930121.100

December 13, 1996

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: THIRD QUARTER 1996 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA
ERRATA SHEET

Dear Mr. Dell'Osso:

Table 3, on page 3 of the Third Quarter, 1996 monitoring report, transmitted on October 4, 1996, contained improper data (from the previous quarter). The enclosed page 3 should replace the page 3 contained in the report. I regret this oversight on my part and trust this clarifies the previously submitted data.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

Martin E. Lay, P.E.
Project Manager

MEL:ls
cc: Dennis Scott, ERS
Rick Azevedo, RWQCB
Steve Tyler, City of Arcata

G:\1993\930121\LTR-6.MEL

Groundwater analytical results indicate that no petroleum hydrocarbons are detectable, at reporting limits, except in MW-2 (TPHD, 64 ug/L), and MW-4 (TPHD 52 ug/l). Groundwater contamination at well MW-2 will be monitored in future sampling events. Dissolved metals of concern are nondetectable at reporting limits or are all below California drinking water standards (maximum contaminant levels). Tannins and lignins were detected, at low, non-regulated levels, in all wells, and do not pose a threat to groundwater quality.

To ensure the reproducibility of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected for every ten groundwater samples. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-2), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Metals[a)] (mg/L)	Tannins & Lignins (mg Tannin/L)
MW-1	8/23/96	<0.50	<50	<50	<500	Cr, Ni, Zn	0.27
MW-2	8/23/96	<0.50	<50	64	<500	<0.020	0.90
MW-3	8/23/96	<0.50	<50	<50	<500	<0.020	4.5
MW-4	8/23/96	<0.50	<50	52	<500	Cr,Ni	1.9
QC-1/MW-2	8/23/96	<0.50	<50	78	<500	---	---

[a] Chromium (Cr), Lead (Pb), Nickel (Ni), Zinc (Zn)--see individual lab reports
QC-1 = Quality Control Sample
--- = not sampled

Quarterly monitoring and reporting will continue, for these existing monitoring wells and piezometer P-1. Monthly water level measurements in all monitoring wells and P-1 will be continued as requested by the Humboldt County Division of Environmental Health (HCDEH).

APPENDIX K

CONSULTING ENGINEERS
& GEOLOGISTS

812 W Wabash
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(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Salvage, PE
Jeff Nelson, PE
Roland S. Johnson, Jr. CEG

Reference: 930121.100

October 4, 1996

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: THIRD QUARTER 1996 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

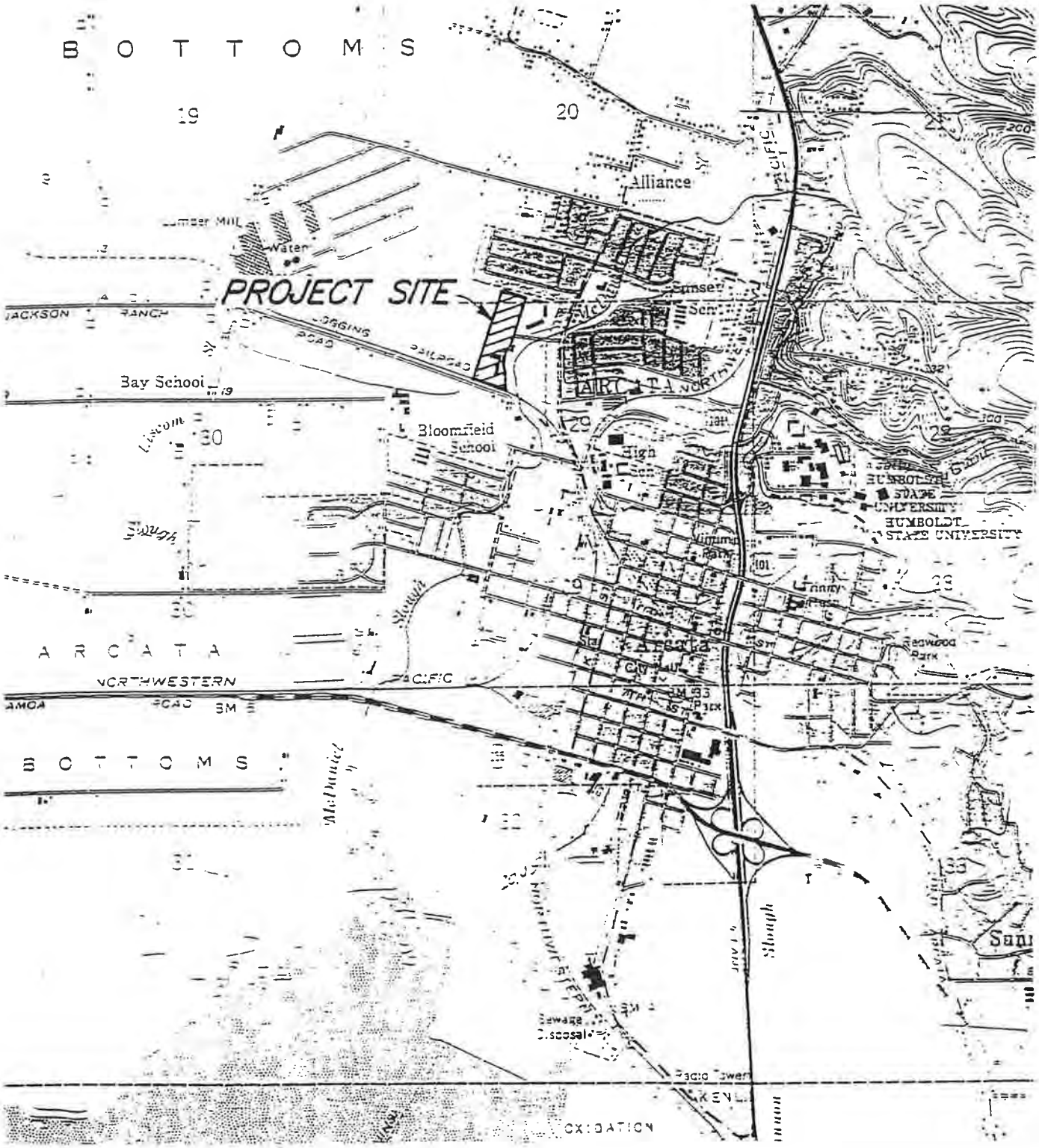
This Third Quarter, 1996 monitoring report is being provided on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995 letter to ERS (Appendix A). The report summarizes groundwater level and groundwater sampling data collected during June, July, and August 1996. Groundwater monitoring well quarterly sampling was conducted in August 1996. Field notes and certified laboratory analytical reports follow in the attached Appendices B and C, respectively.

Table 1 is a summary of the groundwater elevations measured at MW-1, M-2, MW-3, MW-4, and P-1 during this reporting period.

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	6/25/96	6.92	19.77
MW-2	6/25/96	7.03	19.01
MW-3	6/25/96	12.03	12.42
MW-4	6/25/96	8.56	19.16
P-1	6/25/96	10.64	17.93
MW-1	7/26/96	8.79	17.90
MW-2	7/26/96	8.02	18.02

APPENDIX K



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100
SEPTEMBER, 1996

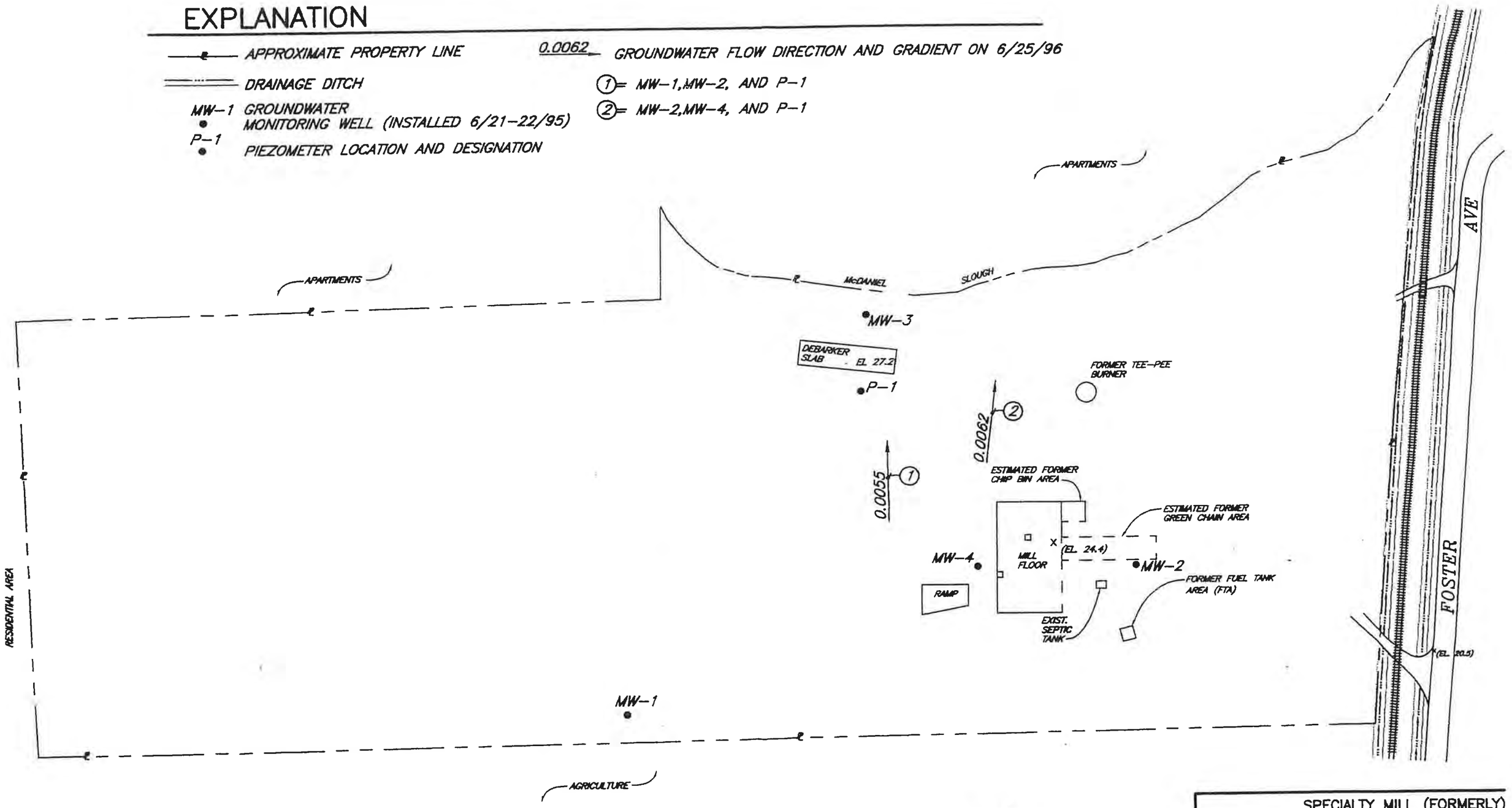
FIGURE 1

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-3	7/26/96	14.40	10.05
MW-4	7/26/96	9.45	18.27
P-1	7/26/96	11.54	17.03
MW-1	8/23/96	10.38	16.31
MW-2	8/23/96	8.67	17.37
MW-3	8/23/96	16.19	8.23
MW-4	8/23/96	10.01	17.71
P-1	8/23/96	12.88	15.69

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Based on the data collected, SHN calculated groundwater flow direction and gradient for the months June, July, and August 1996, for two cluster configurations of monitoring wells each month, (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1) as indicated on Figures 2, 3, and 4, respectively. Well cluster MW-1, MW-2 P-1 is representative of groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area.

Groundwater samples were collected on August 23, 1996 for all required constituents from MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. A summary of the analytical results is presented in Table 2. See Appendix C for analytical results and chain-of-custody documentation.



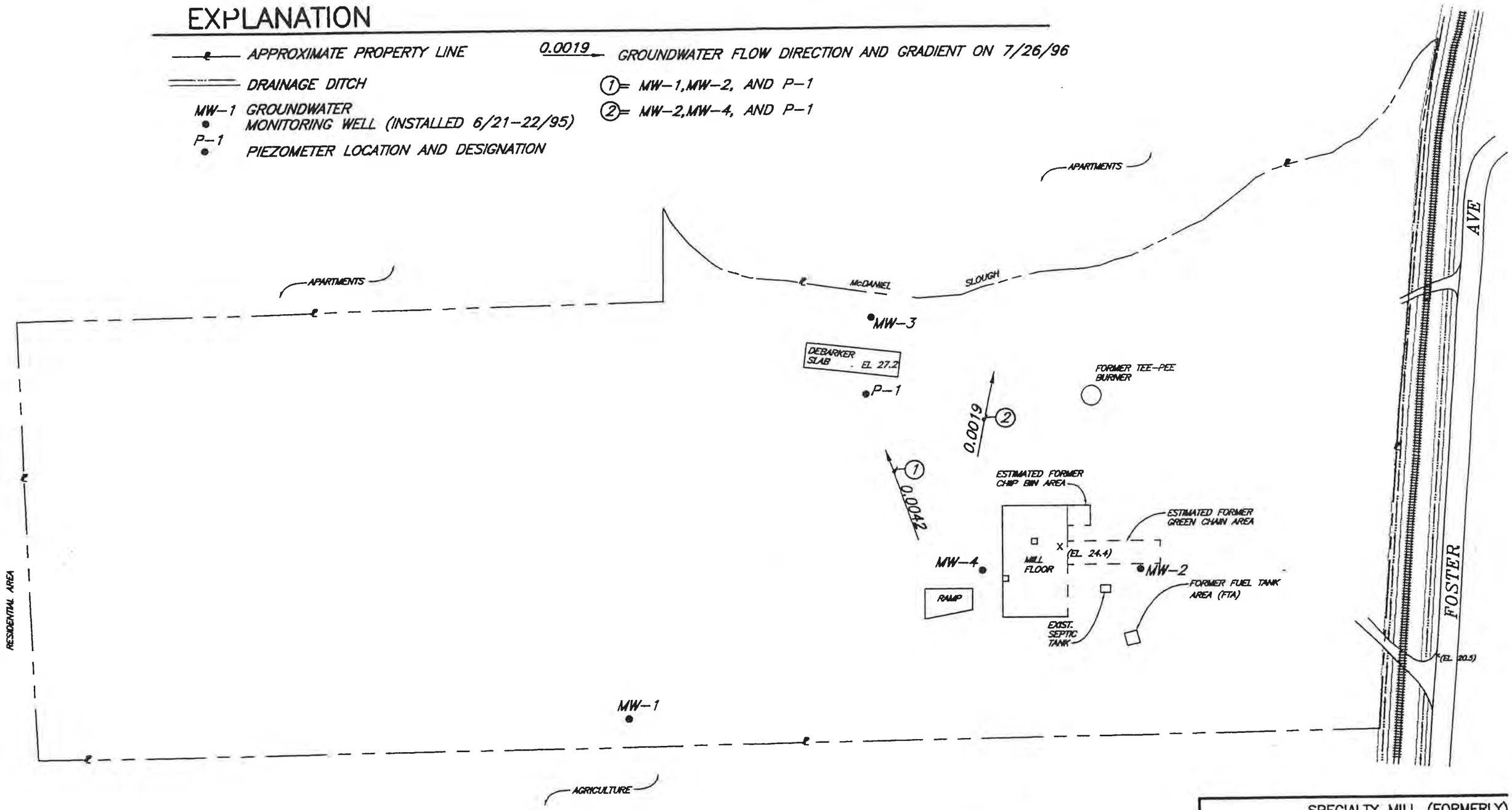
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
SEPTEMBER, 1996

SHN

FIGURE 2



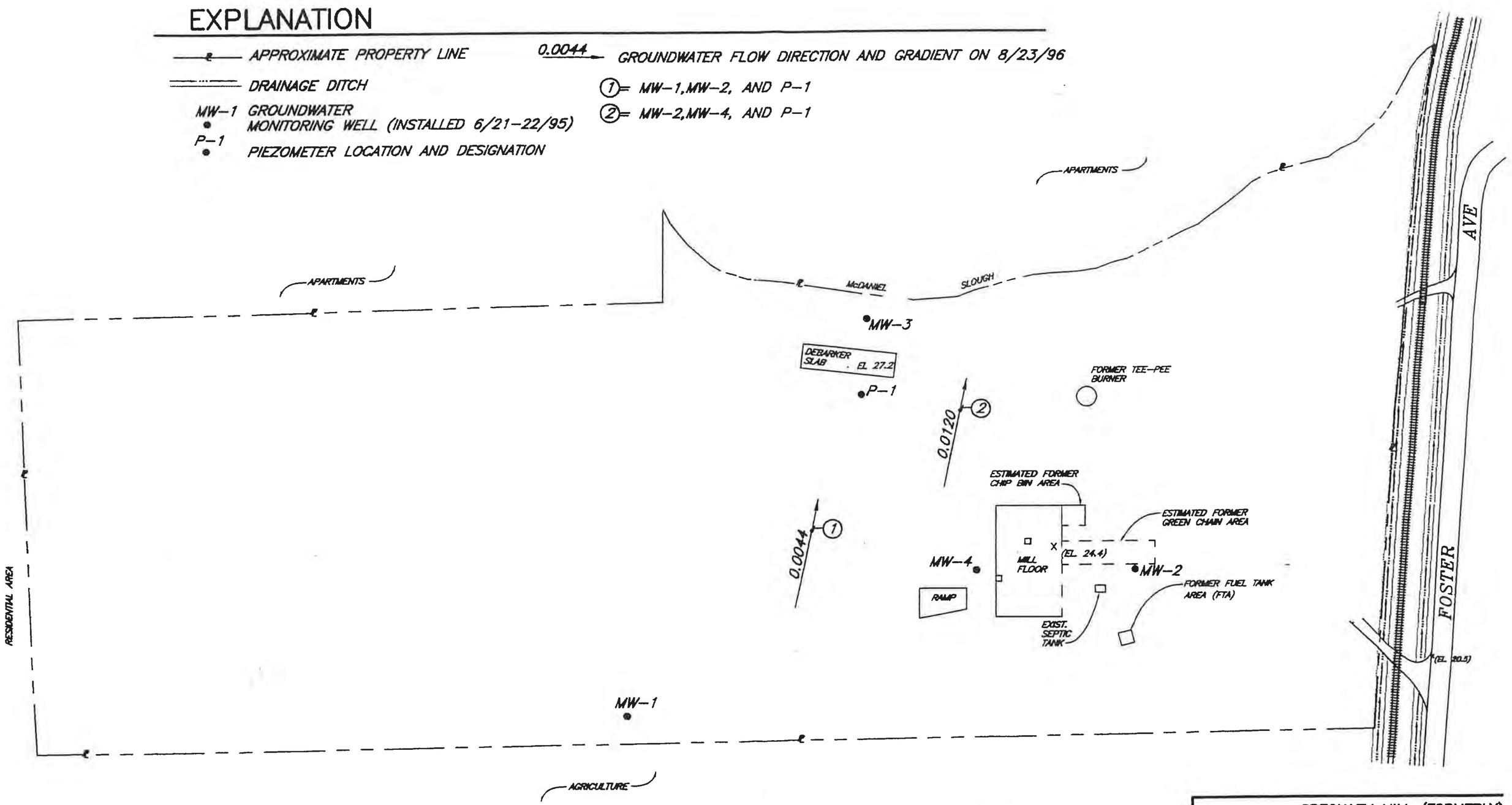
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
SEPTEMBER, 1996

FIGURE 3

930121.2



SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
SEPTEMBER, 1996

SHN

FIGURE 4

Groundwater analytical results indicate that no petroleum hydrocarbons are detectable, at reporting limits, except in MW-2 (TPHD, 64 ug/L), and MW-4 (TPHD 52 ug/l). Groundwater contamination at well MW-2 will be monitored in future sampling events. Dissolved metals of concern are nondetectable at reporting limits or are all below California drinking water standards (maximum contaminant levels). Tannins and lignins were detected, at low, non-regulated levels, in all wells, and do not pose a threat to groundwater quality.

To ensure the reproducibility of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected for every ten groundwater samples. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-2), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Metals[a)] (mg/L)	Tannins & Lignins (mg Tannin/L)
MW-1	5/24/96	<0.50	<50	<50	<500	Cd, Cr, Ni	0.27
MW-2	5/24/96	<0.50	<50	64	<500	<0.020	0.90
MW-3	5/24/96	<0.50	<50	<50	<500	<0.020	4.5
MW-4	5/24/96	<0.50	<50	52	<500	Cr,Ni	1.9
QC-1/MW-2	5/24/96	<0.50	<50	78	<500	---	---

[a] Chromium (Cr), Lead (Pb), Nickel (Ni), Zinc (Zn)--see individual lab reports
QC-1 = Quality Control Sample
--- = not sampled

Quarterly monitoring and reporting will continue, for these existing monitoring wells and piezometer P-1. Monthly water level measurements in all monitoring wells and P-1 will be continued as requested by the Humboldt County Division of Environmental Health (HCDEH).

CONSULTING ENGINEERS
& GEOLOGISTS

Additional site subsurface investigation was conducted in late June and reported to your office in the SHN, July 1996, Remedial Action Plan for Soil Corrective Action (RAP). Overexcavation of documented contaminated soil areas will follow in October. Contaminated soil excavated from the site is proposed to be moved, for remedial action, to ERS Mill A in Fortuna, CA., for bioremediation.

ERS has submitted a Report of Waste Discharge (SHN, May 1996), to the Regional Water Quality Control Board, North Coast Region (RWQCB), and HCDEH, that is currently being processed. The soil Remedial Action Plan (RAP) was submitted to the HCDEH and the RWQCB for approval and comments.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
3-31-96
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:ls
cc: Dennis Scott, ERS
Rick Azevedo, RWQCB
Steve Tyler, City of Arcata

APPENDIX A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

APPENDIX B

FIELD DATA

APPENDIX K

GROUND WATER ELEVATIONS 3 Keys

JOB NO. : 930121.10c
CLIENT: Eel River Sawmills
LOCATION: Foster Ave., Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	4/29/96 DRP	26.69	2.95	23.74
MW-2		26.04	4.06	21.98
MW-3		24.445	9.41	15.035
MW-4		27.72	5.15	22.57
P-1		28.57	7.57	21.00
MW-1	5/24/96 DRP	26.69	4.07	22.62
MW-2		26.04	4.58	21.46
MW-3		24.445	10.31	14.135
MW-4		27.72	6.09	21.63
P-1		28.57	9.09	19.48
MW-1	6/25/96 DRP	26.69	6.92	19.77
MW-2		26.04	7.03	19.01
MW-3		24.445	12.03	12.415
MW-4		27.72	8.56	19.16
P-1		28.57	10.64	17.93
WP-1	6/26/96 DRP	25.42	13.01	12.41
WP-2		27.34	8.40	18.94
WP-3		24.03	5.08	18.95

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 7-26-96 / DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Semi-clear	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING		

Arrived on site at 1417. Then I went around taking water levels out of 5 wells in this order mw-1, P-1, mw-3, mw-4, and mw-2. I de-coned the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Secured all 5 wells with caps, lids, and padlocks. Left site at 1450.

Mileage 20 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 512 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

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GROUND WATER ELEVATIONS

APPENDIX K

JOB NO. : 930121.10
CLIENT: Eel River Sawmills
LOCATION: Foster Ave., Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	4/29/96 DRP	26.69	2.95	23.74
mw-2		26.04	4.06	21.98
mw-3		24.445	9.41	15.035
mw-4		27.72	5.15	22.57
P-1	↓	28.57	7.57	21.00
mw-1	5/24/96 DRP	26.69	4.07	22.62
mw-2		26.04	4.58	21.46
mw-3		24.445	10.31	14.135
mw-4		27.72	6.09	21.63
P-1	↓	28.57	9.09	19.48
mw-1	6/25/96 DRP	26.69	6.92	19.77
mw-2		26.04	7.03	19.01
mw-3		24.445	12.03	12.415
mw-4		27.72	8.56	19.16
P-1	↓	28.57	10.64	17.93
WP-1	6/26/96 DRP		13.01	
WP-2			8.40	
WP-3	↓		5.08	
mw-1	7/26/96 DRP	26.69	8.79	17.90
mw-2		26.04	8.02	18.02
mw-3		24.445	14.40	10.045
mw-4		27.72	9.45	18.27
P-1	↓	28.57	11.54	17.03

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 1

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 8-23-96	DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Quarterly Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Foggy Overcast	TECHNICIAN David R. Paine	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0653. Then I removed all lids and caps on all 5 wells. Then I took all water levels in all wells de-coning the sounder after each well by scrubbing it with liquinox then rinsed with DI water. Then I purged mw-1, mw-3, mw-4, and mw-2 in this order with a TEFLON 2" bailer. All purge water was caught in 5 gal. buckets and then dumped into a 55 gal. drum located by mw-1 and labeled accordingly. I de-coned the bailer after purging each well by scrubbing it with liquinox then rinsing it with DI water. Then I sampled mw-1, mw-3, mw-4, and mw-2 in this order with a disposable bailer, 1 for each well. Then I secured all wells with caps and lids. QC-1 came out of mw-2.
Left site for NCL at 1159.

Mileage 31 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

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GROUND WATER ELEVATIONS

Gate Key

JOB NO. : 930121.100

CLIENT: Eel River Sawmills

LOCATION: Foster Ave. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	8/23/96 DEP	26.69	10.38	16.31
MW-2		26.04	8.67	17.37
MW-3		24.445	16.19	8.255
MW-4		27.72	10.01	17.71
P-1		28.57	12.88	15.69

SHN

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	8-23-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Paine
WELL NO.	MW-1	ELEVATION	
TOTAL DEPTH	14.78	WATER	
DEPTH		ELEVATION	
TO WATER	10.38		

HT OF WATER COLUMN 4.40 X(0.~~66~~ .16)=CASING VOL 0.70 x 3 = 2.1/

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
10.38	0748	0749	.75 gal.	360	59.2°	6.56
		0754	1.50 gal.	355	58.3°	6.50
		0800	2.25 gal.	376	58°	6.46

TOTAL 2.3 gal.

INITIAL WATER VOLUME 0.7 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1050

SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO, 5 Metals, Tannins + Lignins

LABORATORY NCL

REMARKS

Recharged to 10.48 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 930121.100 DATE 8-23-96

CLIENT Eel River Sawmills SAMPLER David R. Paine

WELL NO. mw-2 ELEVATION

TOTAL DEPTH 12.05 WATER ELEVATION

DEPTH TO WATER 8.67

HT OF WATER COLUMN 3.38 X(0.~~66~~ .16)=CASING VOL 0.54 x 3 = 1.62

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
8.67	0958	0959	.50 gal.	376	63.5°	6.37
		1002	1 gal.	374	64.0°	6.31
		1005	1.75 gal.	381	64.3°	6.35

TOTAL 1.8 gal.

INITIAL WATER VOLUME 0.5 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1150

SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO, 5 Metals, Tannins + Lignins

LABORATORY NCL

REMARKS QC-1 TPHG/BTEX, TPHD/MO

Recharged to 8.71 at sampling time

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APPENDIX K

FIELD SAMPLING LOG

PROJECT # 930121.100 DATE 8-23-96

CLIENT Eel River Sawmills SAMPLER David R. Paine

WELL NO. MW-3 ELEVATION

TOTAL DEPTH 25.90 WATER

DEPTH ELEVATION

TO WATER 16.19

HT OF WATER COLUMN 9.71 X(0.~~66~~ .16)=CASING VOL 1.55 x 3 = 4.66

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
16.19	0825	0828	1.75 gal.	881	58.6°	6.85
		0834	3 gal.	879	58.3°	6.80
Empty		0840	3.75 gal.	829	58.3°	6.92
Empty	0855	0857	4.25 gal.	816	58.7°	6.92
Empty	0912	0914	4.75 gal.	814	59.1°	7.00

TOTAL 4.8 gal.

INITIAL WATER VOLUME 1.6 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1110

SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO, 5 Metals, Tannins + Lignins

LABORATORY NCL

REMARKS

Recharged to 21.60 at sampling time

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APPENDIX K

FIELD SAMPLING LOG

PROJECT # 930121.100 DATE 8-23-96

CLIENT Eel River Sawmills SAMPLER David R. Paine

WELL NO. MW-4 ELEVATION

TOTAL DEPTH 14.54 WATER

DEPTH ELEVATION

TO WATER 10.01

HT OF WATER COLUMN 4.53 X(0.~~66~~ .16)=CASING VOL 0.73 x 3 = 2.17

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
10.01	0933	0935	.75 gal.	380	62.1°	6.49
		0938	1.50 gal.	370	61.8°	6.43
		0942	2.25 gal.	364	61.6°	6.41

TOTAL 2.3 gal.

INITIAL WATER VOLUME 0.7 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1130

SAMPLE ANALYSIS TPHG/BTEX, TPHD/mo, 5 Metals, Tannins + Lignins

LABORATORY NCL

REMARKS

Recharged to 10.17 at sampling time

E:\FORMS\FIELD.LOG

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

P. 1 of 1

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459 A
Fortuna Co. 95540
Phone: 725-6911
Copies of Report to: Shiri Marty Lay
817 W. Wabash Ave.
Eureka, Co. 95501

TAT: ☐ 24 Hr ☒ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: ___/___
Final Report: FAX ☐ Verbal ☐ By: ___/___/___

PROJECT INFORMATION
Project Number: 9301211.106
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPHG/BTEX	TPHD/TPHMO	Dissolved Pb, Ni, Zn metals	Tannins & Lignins
	mw-1	8/23/96	1050	SW	9	b	X	X	X	X
	mw-3		1110		7		X	X	X	X
	mw-4		1130		3		X	X	X	X
	mw-2		1150		2		X	X	X	X
	QC-1		—				X	X		X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
intact-ice
1TB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David L. Paine David L. Paine	1204 8/23/96		1204

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

APPENDIX C

ANALYTICAL RESULTS

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9608548

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: RL 1 Box 459 A
Fortuna, Ca. 95540
Phone: 725-6711
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Specialty Mill
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	TPHG / BTEX	TPHD / MO	Dissolved Metals Cd Cr Pb Ni Zn	Tannins + Lignins
1	MW-1	8/23/96	1050	GW	b	9	X	X	X	X
2	MW-3		1110			7	X	X	X	X
3	MW-4		1130			5	X	X	X	X
4	MW-2		1150			5	X	X	X	X
5	QC-1	↓	—	↓		2	X	X		X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
intact/cool

TB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Pairs David R. Pairs	1204 8/23/96	[signature] 8/23/96	1204

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

NORTH COAST LABORATORIES LTD.

DATE: September 06, 1996

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

ATTENTION: Colin Dazzi

NCL: 96-08-548

ADDENDUM TO CHEMICAL EXAMINATION REPORT

PARAMETER	NOTATIONS
TPHC Diesel	Samples 03B, 04B and 05B contain material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road . Arcata California 95521 . 707-822-4649 . FAX 707-822-6831

APPENDIX K

NORTH COAST LABORATORIES LTD.

Date: 09/12/96 REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 96-08-548

INVOICE # 60053750

Attn: Colin Dazzi

WORK ID: ERS Speciality Mill/930121.10

Laboratory Supervisor(s)

REPORT CERTIFIED BY

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
01	MW-1
01	MW-1
02	MW-3
02	MW-3
02	MW-3
02	MW-3
03	MW-4
03	MW-4
03	MW-4
03	MW-4
04	MW-2
04	MW-2
04	MW-2
04	MW-2
05	QC-1
05	QC-1
06	Blank
07	Lab. Control Sample
08	Blank
09	Lab. Control Sample

Comments:

Previously reported on 09/06/96.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Surrogate:						08/30/96	EPA 602
cis-1,2-dichloroethene	112	N/A	% Rec	1.0		08/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/30/96	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID

SAMPLE ID: MW-1 FRAC.: 01C COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		09/04/96	EPA 6010A
Chromium	0.032	0.0050	mg/L	1.0		09/04/96	EPA 6010A
Nickel	0.059	0.020	mg/L	1.0		09/04/96	EPA 6010A
Zinc	0.030	0.020	mg/L	1.0		09/04/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		09/04/96	EPA 239.2

SAMPLE ID: MW-1 FRAC.: 01D COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.27	0.10	mg Tannin/L	1.0		08/30/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Surrogate:						08/30/96	EPA 602
cis-1,2-dichloroethene	110	N/A	% Rec	1.0		08/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/30/96	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 02C COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		09/04/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		09/04/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		09/04/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		09/04/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		09/04/96	EPA 239.2

SAMPLE ID: MW-3 FRAC.: 02D COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	4.5	0.20	mg Tannin/L	2.0		08/30/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 03A COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Surrogate:						08/30/96	EPA 602
cis-1,2-dichloroethene	112	N/A	% Rec	1.0		08/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/30/96	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 03B COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	52	50	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 03C COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		09/04/96	EPA 6010A
Chromium	0.014	0.0050	mg/L	1.0		09/04/96	EPA 6010A
Nickel	0.034	0.020	mg/L	1.0		09/04/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		09/04/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		09/04/96	EPA 239.2

SAMPLE ID: MW-4 FRAC.: 03D COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.9	0.10	mg Tannin/L	1.0		08/30/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-2 FRAC.: 04A COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Surrogate:						08/30/96	EPA 602
cis-1,2-dichloroethene	108	N/A	% Rec	1.0		08/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/30/96	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 04B COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	64	50	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 04C COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		09/04/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		09/04/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		09/04/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		09/04/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		09/04/96	EPA 239.2

SAMPLE ID: MW-2 FRAC.: 04D COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.90	0.10	mg Tannin/L	1.0		08/30/96	SM 5550B

APPENDIX K

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/30/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/30/96	EPA 602
Surrogate:						08/30/96	EPA 602
cis-1,2-dichloroethene	111	N/A	% Rec	1.0		08/30/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/30/96	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05B COLLECTED: 08/23/96 RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	78	50	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/29/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/29/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/29/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/29/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/29/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/29/96	EPA 602
Surrogate:						08/29/96	EPA 602
cis-1,2-dichloroethene	105	N/A	% Rec	1.0		08/29/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/29/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/29/96	08/29/96	EPA3510GCFID

APPENDIX K

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	96.9	N/A	% Rec	1.0		08/29/96	EPA 602
Benzene	91.8	N/A	% Rec	1.0		08/29/96	EPA 602
Toluene	99.0	N/A	% Rec	1.0		08/29/96	EPA 602
Ethylbenzene	95.2	N/A	% Rec	1.0		08/29/96	EPA 602
m,p Xylene	99.5	N/A	% Rec	1.0		08/29/96	EPA 602
o Xylene	99.3	N/A	% Rec	1.0		08/29/96	EPA 602
Surrogate:						08/29/96	EPA 602
cis-1,2-dichloroethene	105	N/A	% Rec	1.0		08/29/96	EPA 602
TPHC Gasoline/water	98.3	N/A	% Rec	1.0		08/29/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	86.9	N/A	% Rec	1.0	08/29/96	08/29/96	EPA3510GCFID
TPHC - Motor Oil	105	N/A	% Rec	1.0	08/29/96	08/29/96	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 08A COLLECTED: N/A RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		09/04/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		09/04/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		09/04/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		09/04/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		09/04/96	EPA 239.2
Tannin and Lignin	ND	0.10	mg Tannin/L	1.0		08/30/96	SM 5550B

SAMPLE ID: Lab. Control Sample FRAC.: 09A COLLECTED: N/A RECEIVED: 08/23/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	88.4	N/A	% Rec	1.0		09/04/96	EPA 6010A
Chromium	104	N/A	% Rec	1.0		09/04/96	EPA 6010A
Nickel	103	N/A	% Rec	1.0		09/04/96	EPA 6010A
Zinc	102	N/A	% Rec	1.0		09/04/96	EPA 6010A
Lead	92.6	N/A	% Rec	4.0		09/04/96	EPA 239.2
Tannin and Lignin	95.2	N/A	% Rec	1.0		08/30/96	SM 5550B

APPENDIX K

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John R. Salvage, PE
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Roland S. Johnson, PE, C.E.G.

Reference: 930121.100

December 23, 1996

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

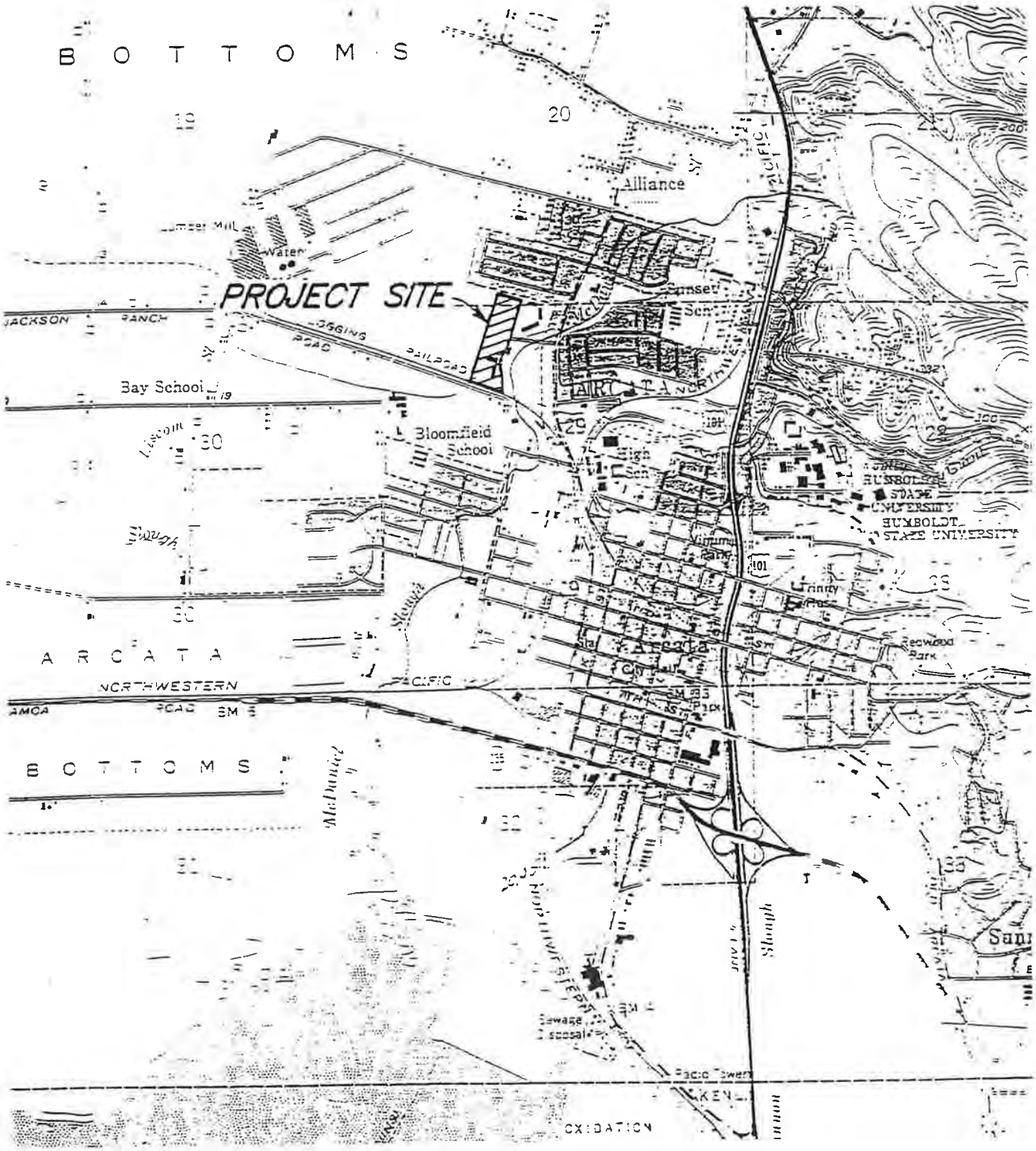
SUBJECT: FOURTH QUARTER 1996 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

This Fourth Quarter, 1996 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995 letter to ERS (Appendix A). The report summarizes groundwater level and groundwater sampling data collected during September, October, and November 1996. Groundwater monitoring well quarterly sampling was conducted in November 1996. Field notes and certified laboratory analytical reports follow in the attached Appendices B and C, respectively.

Remedial action planned for the site was not conducted during this quarter due to inclement weather that hampered setup operations at the ERS, Mill A, bioremediation site. Conditional approval, of the SHN July 1996 Remedial Action Plan and associated Amendment No. 1, by HCDEH was granted in a HCDEH letter dated October 8, 1996 (Appendix A), and verbal discussion (10/24/96) between Martin Lay (SHN) and Dale Dell'Osso (HCDEH). ERS received General Waste Discharge Requirements Order No. 92-66, for Specialty Mill soil bioremediation to be conducted at Mill A, from the California Regional Water Quality Control Board, North Coast Region (RWQCB) in a conditional approval letter dated October 11, 1996 (Appendix A).

APPENDIX K



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

FIGURE 1

Table 1 is a summary of the groundwater elevations measured at monitoring wells MW-1, M-2, MW-3, MW-4, and piezometer P-1 during this reporting period.

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	9/26/96	12.22	14.47
MW-2	9/26/96	9.06	16.98
MW-3	9/26/96	16.05	8.395
MW-4	9/26/96	10.67	17.05
P-1	9/26/96	DRY	—
MW-1	10/28/96	13.19	13.50
MW-2	10/28/96	7.73	18.31
MW-3	10/28/96	15.40	8.955
MW-4	10/28/96	9.34	18.38
P-1	10/28/96	13.34	15.23
MW-1	11/22/96	6.82	19.87
MW-2	11/22/96	4.22	21.82
MW-3	11/22/96	14.44	10.005
MW-4	11/22/96	5.90	21.82
P-1	11/22/96	9.03	19.54

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Based on the data collected, SHN calculated groundwater flow direction and gradient for the months September, October, and November 1996. Data collected in September indicated that piezometer P-1 was dry, therefore the gradient and direction calculation reflects the west side localized groundwater information (Figure 2). The months of October and November are represented, by two cluster configurations of monitoring wells (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figures 3 and 4, respectively. Well cluster MW-1, MW-2 P-1 is representative of groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area.

Groundwater samples were collected on August 23, 1996 for all required constituents from wells MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. A summary of the fourth quarter sample analytical results is presented in Table 2. See Appendix C for analytical results and chain-of-custody documentation.

Groundwater analytical results indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) are not detectable, at reporting limits, except in MW-2 (TPHD, 300 ug/L), and MW-4 (TPHD 88 ug/l). Dissolved metals of concern are nondetectable at reporting limits and are all below California drinking water standards (maximum contaminant levels). Tannins and lignins were detected, at low, non-regulated levels, in all wells, and do not pose a threat to groundwater quality.

To ensure the reproducibility of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected during this monitoring event. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-4), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses.

EXPLANATION

—— ℄ —— APPROXIMATE PROPERTY LINE

0.0183 GROUNDWATER FLOW DIRECTION AND GRADIENT ON 9/26/96 MW-1, MW-2, AND MW-4

DRAINAGE DITCH

MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)

P-1 PIEZOMETER LOCATION AND DESIGNATION

APARTMENTS

APARTMENTS

℄ McDANIEL SLOUGH

MW-3

DEBARKER SLAB . EL 27.2

P-1

FORMER TEE-PEE BURNER

AVE

FOSTER

(EL. 20.5)

ESTIMATED FORMER CHIP BIN AREA

ESTIMATED FORMER GREEN CHAIN AREA

MW-4

MILL FLOOR

(EL. 24.4)

MW-2

FORMER FUEL TANK AREA (FTA)

RAMP

EXIST. SEPTIC TANK

S=0.0183

RESIDENTIAL AREA

MW-1

AGRICULTURE

0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY
ARCATA, CALIFORNI
APN #505-161-1

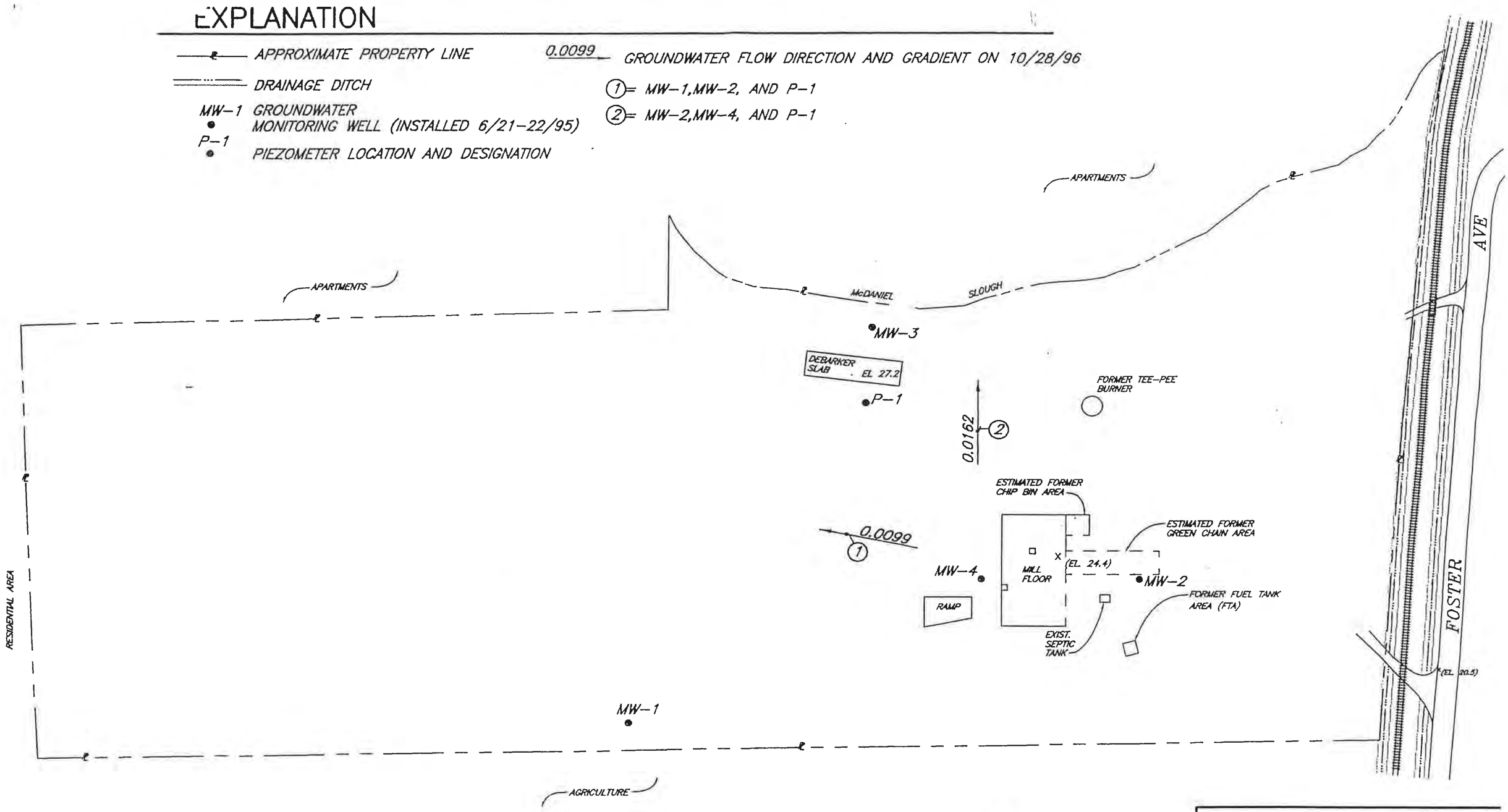
GROUNDWATER FLOW DIRECTIO
AND GRADIEN

SHN 930121.10
DECEMBER, 199

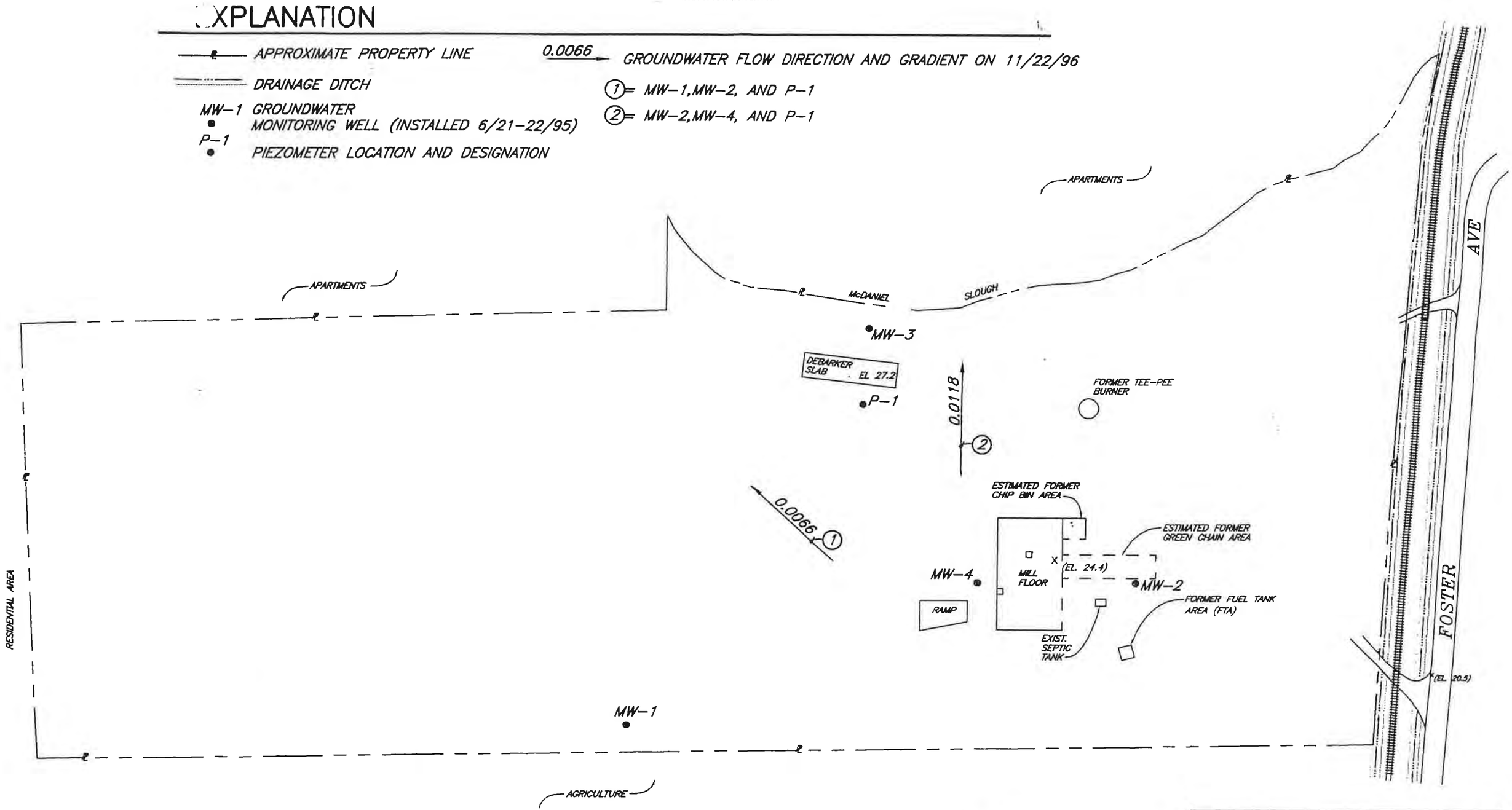
SHN

FIGURE

930121P4


EXPLANATION
APPROXIMATE PROPERTY LINE
DRAINAGE DITCH
MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)
P-1 PIEZOMETER LOCATION AND DESIGNATION
0.0099 GROUNDWATER FLOW DIRECTION AND GRADIENT ON 10/28/96
(1) = MW-1, MW-2, AND P-1
(2) = MW-2, MW-4, AND P-1
APARTMENTS
APARTMENTS
McDANIEL SLOUGH
MW-3
DEBARKER SLAB EL 27.2
P-1
FORMER TEE-PEE BURNER
0.0162
(2)
ESTIMATED FORMER CHIP BIN AREA
ESTIMATED FORMER GREEN CHAIN AREA
0.0099
(1)
MW-4
MILL FLOOR
(EL. 24.4)
MW-2
FORMER FUEL TANK AREA (FTA)
RAMP
EXIST. SEPTIC TANK
AVE
FOSTER
(EL. 20.5)
RESIDENTIAL AREA
MW-1
AGRICULTURE
0 50 100 Feet
SCALE: 1" = 100'
ALL LOCATIONS ARE APPROXIMATE
SPECIALTY MILL (FORMERLY
ARCATA, CALIFORNI
APN #505-161-1
GROUNDWATER FLOW DIRECTIO
AND GRADIEN
SHN 930121.10
DECEMBER, 199
SHN
FIGURE

930121PZ



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
DECEMBER, 1996

FIGURE **4**

TABLE 2

SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Metals[a)] (mg/L)	Tannins & Lignins (mg Tannin/L)
MW-1	11/22/96	<0.50	<50	<50	<500	<0.020	0.96
MW-2	11/22/96	<0.50	<50	300	<500	<0.020	0.90
MW-3	11/22/96	<0.50	<50	<50	<500	<0.020	3.1
MW-4	11/22/96	<0.50	<50	88	<500	<0.020	1.3
QC-1/MW-4	11/22/96	<0.50	<50	80	<500	---	---

[a] Chromium (Cr), Lead (Pb), Nickel (Ni), Zinc (Zn)--see individual lab reports
QC-1 = Quality Control Sample
--- = not sampled

Quarterly monitoring and reporting will continue, for these existing monitoring wells and piezometer P-1. Monthly water level measurements in all monitoring wells and P-1 will be continued as requested by the HCDEH.

SHN proposes that the quarterly analyses for tannins and lignins be dropped immediately from the required analytical suite due to the consistently low documented levels of these constituents. Additionally, if the metals analyses performed in the First Quarter 1997 monitoring event yields non detectable or values below the MCL, SHN will propose deletion of the metals constituents from the required sampling analytical suite. Table 3 presents a summary of groundwater monitoring results for the four quarters of 1996 for reference to the above proposal.

TABLE 3.
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES
COLLECTED DURING 1996

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)
MW-1											
	2/23/96	<0.05	<50	<50	<500	--	<0.0050	<0.020	0.049	<0.020	0.88
	5/24/96	<0.05	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.57
	8/23/96	<0.05	<50	<50	<500	<0.010	0.032	0.059	0.030	<0.020	0.27
	11/22/96	<0.05	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.97
MW-2											
	2/23/96	<0.05	<50	180 [1]	<500	--	<0.0050	<0.020	<0.020	<0.020	1.1
	5/24/96	<0.05	<50	110 [1]	<500	<0.010	<0.0050	<0.020	0.34	<0.020	1.0
	8/23/96	<0.05	<50	64 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.90
	11/22/96	<0.05	<50	300 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.96
MW-3											
	2/23/96	<0.05	<50	<50	<500	--	<0.0050	<0.020	0.031	<0.020	4.5
	5/24/96	<0.05	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	5.2
	8/23/96	<0.05	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.5
	11/22/96	<0.05	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	3.1
MW-4											
	2/23/96	<0.05	<50	<50	<500	--	<0.0050	<0.020	0.17	<0.020	2.1
	5/24/96	<0.05	<50	<50	<500	<0.010	<0.0050	<0.020	0.38	<0.020	1.7
	8/23/96	<0.05	<50	52 [1]	<500	<0.010	0.014	0.034	<0.020	<0.020	1.9
	11/22/96	<0.05	<50	88 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	1.3

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

APPENDIX K

E:\930121\96table.xls

CONSULTING ENGINEERS
& GEOLOGISTS

Dale Dell'Osso
1996 Groundwater Monitoring Report
December 23, 1996
Page 5

First Quarter 1997 work will also include finalization of written remedial action methodology and operations, and response to outlying questions, as requested in the HCDEH and RWQCB correspondence (Appendix A).

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

Martin E. Lay, P.E.
Project Manager

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
3-31-98
CIVIL
STATE OF CALIFORNIA

MEL:ls
cc: Dennis Scott, ERS
Rick Azevedo, RWQCB
Steve Tyler, City of Arcata

APPENDIX A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

100 H STREET, SUITE 100, EUREKA, CA 95501

(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

8 October 1996

Eel River Saw Mills, Incorporated
Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the report of findings and the amended soil remedial action plan prepared by SHN Consulting Engineers and Geologists (SHN).

A. Report of Findings

Several of the soil samples collected in this and previous investigations exhibited elevated levels of chromium, lead, nickel and zinc. The report did not provide information regarding background concentrations of heavy metals. It was our understanding that this information would be provided as discussed at our 29 November 1995 meeting. Please provide this information.

B. Remedial Actions

We have some concerns that will need to be addressed prior to beginning remedial action at the Arcata Specialty Mill site and the proposed treatment facility at the Fortuna Metropolitan Mill 'A' facility. Our comments are outlined below.

Initial Remedial Action

- The Remedial Action Plan (RAP) has identified overexcavation as the chosen remedial alternative with off-site treatment of contaminated soil. The Report of Waste Discharge will need to be approved by the NCRWQCB prior to transporting contaminated soil to the Metropolitan Mill 'A' facility in Fortuna.
- Please provide a site plan illustrating those areas proposed for overexcavation.
- The RAP needs to address cleanup levels for chromium, nickel, and zinc in those areas with elevated concentrations.
- The RAP states that the soil samples from the stockpiles will be composited at the laboratory but does not address the compositing ratio. Please provide this information.
- Please describe what precautions will be taken to prevent puncture of the treatment cell liner by equipment. We recommend a layer of sand be placed beneath and on top of the plastic liner.

- The treatment area needs to be adequately secured from unauthorized entry. Additional fencing on the south and west sides of the proposed treatment area will need to be constructed to adequately secure the treatment area. Additionally, access arrangements will need to be made for inspections of the treatment facility by HCDEH and NCRWQCB personnel.

- We understand soil from the Metropolitan Mill 'A' fueling area will also be treated in this area. Please provide information on quantity, contaminant type, concentrations and soil types from this area.

- The RAP states the tilling equipment will be cleaned before leaving the operations area but does not address cleaning equipment between windrows. Soil tracked between the windrows may come in contact with surface run-off waters. We understand that potentially contaminated run-off waters will be sampled at least once monthly and discharged to the drainage system. Contaminated run-off waters may need treatment before discharge. It is unclear whether or not surface run-off will be impounded and/or treated prior to sampling and release.

- Target cleanup levels and disposition of the treated soils need to be adequately addressed. SHN outlines several disposal alternatives for the treated soil. Previous experience has indicated that reduction of contaminant concentrations for TPH greater than 95 percent may be difficult to achieve. This eventuality must be considered when evaluating ultimate disposition of treated soil.

- SHN states that samples will be collected to assess treatment effectiveness but does not provide a complete schedule. In addition, specific sample collection methods for determination of biotreatability effectiveness will need to be adequately addressed (e.g., soil sample collection methods for TPHg, soil oxygen and carbon dioxide concentrations, etc.). A detailed remedial progress plan with milestone report periods needs to be developed for the proposed land treatment unit which should include (but not necessarily limited to):
  - Monitoring schedule;
  - collection methods used;
  - constituent concentrations and reduction;
  - biodegration conditions;
  - vapour emission monitoring;
  - run-off water sampling;
  - Soil pH and moisture content;
  - bacterial populations;
  - nutrient concentrations and needs.

Future Remedial Actions

The report of findings briefly discusses the need to address remaining soil contamination and mitigation alternatives dependent upon land use, once the initial remedial action is completed. Our understanding is that this site will be redeveloped as riparian habitat along the Janes Creek-McDaniel Slough waterway and as residential parcels. We understand that some contamination exists at the former land surface beneath the reported 2-5 feet of fill placed on the log deck in addition to the isolated areas of contamination. This fill material consists of river-run sands, silts, gravels and cobbles.

We are concerned that excavation for buried utilities, deep foundations, and removal of rocky fill for landscaping purposes may bring contaminated soil to the surface where it may propose a potential human and environmental health risk. This needs to be addressed in the final remedial action plan. A final Remedial Action Plan (RAP) for treatment of the soil will need to be submitted for review once the initial remedial action is completed.

Please submit the requested information by 31 October 1996. I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.004 / 697L

STATE OF CALIFORNIA - CALIFORNIA ENVIRONMEN.. - PROTECTION AGENCY PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION
5550 SKYLANE BLVD. SUITE A
SANTA ROSA, CA 95403
PHONE: (707) 576-2220

REC'D OCT 15 1996

October 11, 1996

Mr. Dennis Scott
Eel River Sawmills
1053 Northwestern Avenue
Fortuna, CA 95540

Subject: Bioremediation of Soil, Eel River Sawmill-Specialty Mill, Humboldt County

Dear Mr. Scott:

Eel River Sawmills is proposing to treat petroleum contaminated soils at Mill "A" in Fortuna. Soils from the Eel River Sawmills-Specialty Mill site will be excavated and hauled to Mill "A" for treatment.

Your consultants, SHN Engineers and Geologists (SHN), have submitted a complete Report of Waste Discharge (ROWD). SHN has proposed that the bioremediation activities be conducted under Order No. 92-66, General Waste Discharge Requirements for Soil Bioremediation. During recent discussions with Marti Lay of SHN we discussed a slight modification to the ROWD. Rather than narrow windrows, larger soil piles would be constructed. We concur with this approach in that it may reduce the potential for tracking petroleum-containing soil out of the containment area.

The proposed surface water sampling frequency should be clarified. The proposed sampling frequency is adequate for winter periods when no activities occur. A clause should be added to the sampling plan requiring that samples be taken the first rainstorm after winterization, or when any wintertime activities occur.

The proposed surface water sampling frequency should be clarified. The proposed sampling frequency is adequate for winter periods when no activities occur. A clause should be added to the sampling plan requiring that samples be taken the first rainstorm after winterization, or when any wintertime activities occur.

On August 12, 1996 Regional Water Board staff published a notice of its intent to regulate the proposed activities under Order No. 92-66. The public comment period has closed without receipt of substantial comments that would affect the proposed project.

Therefore, Order No. 92-66 for bioremediation of soil generated at the Eel River Sawmills Specialty Mill is enclosed and is effective immediately. The permit will expire in two years on October 1, 1998.

If you have any questions, please contact Richard Azevedo of my staff at (707) 576-2679.

Sincerely,

Craig R. Johnson
Acting Executive Officer

RGA:tab/ers-rga.oc2

Enclosure

cc: Marti Lay, SHN Engineers and Geologists, 812 W. Wabash, Eureka, CA 95501
Dale Del'Osso, Humboldt County Environmental Health Department

California Regional Water Quality Control Board
North Coast Region

ORDER NO. 92-66

GENERAL WASTE DISCHARGE REQUIREMENTS

FOR

SOIL BIOREMEDIATION AND/OR AERATION ACTIVITIES

The California Regional Water Quality Control Board, North Coast Region (hereinafter the Board), finds that:

1. The California Water Code provides that all persons discharging waste or proposing to discharge waste that could affect the quality of waters of the state file a report of waste discharge with the Regional Board, and submit the appropriate filing fee. This includes the discharge of waste to land pursuant to Division 3, Chapter 15, Title 23, California Code of Regulations.

2. The enhanced bioremediation of soils contaminated with petroleum products and similar biodegradable substances is an effective treatment technology capable of reducing the levels of contaminants and volume of waste requiring further disposal. The aeration of soils containing volatile substances is an effective treatment technology capable of reducing the levels of contaminants and volume of waste requiring further disposal. Final disposal options for any treated soils will be evaluated upon completion of treatment.

3. The aeration or enhanced bioremediation of contaminated soil removed from the site of contamination is subject to the regulations contained in Chapter 15, Title 23, California Code of Regulations. Chapter 15 contains provisions which enable the Regional Board to accept alternatives to construction or prescriptive standards contained in Chapter 15 if it is shown that the standards are unreasonable and unnecessarily burdensome or impractical and will not promote attainment of applicable performance standards and that there is a specified engineered alternative addressed by the particular construction or prescriptive standard and affords equivalent protection against water quality impairment. The report of waste discharge for projects regulated by these requirements fully described the proposed aeration or enhanced bioremediation projects to treat soils contaminated with petroleum hydrocarbons or similar degradable compounds, and fully described the engineered alternatives to the following construction or prescriptive standards contained in Chapter 15:

   a. Chapter 15 requires land treatment units to be located outside of the 100 year floodplain and protected from surface runoff generated in a storm with 25 year frequency and 24 hour duration. This site is located outside of the 100 year floodplain.

b. Summertime treatment of contaminated soils in Northern California will not be affected by major precipitation events.

c. The site is level and the aeration or enhanced bioremediation operation would not be subject to uncorrectable damage in the event of an earthquake.

d. Other aspects of the short-term aeration or bioremediation operation as required under this Order are compliant with Chapter 15.

4. The Board adopted Water Quality Control Plans for the Klamath River Basin (1A) and the North Coastal Basin (1B) on March 20, 1975. The Klamath River Basin Plan (1A) was combined with the North Coastal Basin Plan (1B) to form the Water Quality Control Plan for the North Coast Region. The Plan for the North Coast Region was adopted by the Board on April 28, 1988 and approved by the State Water Resources Control Board on November 15, 1988. The Plan includes water quality objectives, implementation plans for point source and nonpoint source discharges and statewide plans and policies.

5. The beneficial uses of the areal groundwater, as identified in the Water Quality Control Plan for the North Coast Region, includes: municipal, domestic, agricultural, and industrial supply.

6. The action to adopt these general waste discharge requirements consists of a minor modification to land and is to implement required provisions of enforcement actions, and is therefore exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 2100, et seq.), in accordance with Sections 15304 and 15321 of Title 14 of the California Code of Regulations.

7. The Board has notified interested agencies and persons of its intent to prescribe general waste discharge requirements for these land treatment facilities and has provided them with an opportunity to submit their written comments and recommendations.

8. The Board, in a public meeting, heard and considered all comments pertaining to these general waste discharge requirements.

THEREFORE, IT IS HEREBY ORDERED that persons filing a notice of intention to be regulated (hereinafter the discharger) under the provisions of this general Waste Discharge Requirements Order No. 92-66 in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. CONDITIONS OF APPLICATION

1. The discharger shall submit a complete report of waste discharge describing the proposed action including the estimated volume of soil to be treated, characterization of the nature of the contamination in the soils, description of the treatment system, description of the nature and volume of any nutrient or chemical additives, all necessary sizing calculations to accommodate the treatment volume, description of wet weather treatment controls, description of procedures to collect and address any leachate, schedule for submittal of sampling plan for remediated soils and soils under the liner, schedule for submittal of a closure plan, and other pertinent information for the specific site.

2. These waste discharge requirements shall not take effect until thirty days after the discharger has filed a complete report of waste discharge and published a description of the project in a newspaper of general circulation, posted the notice in the general area of the discharge and provided copies of the notice to nearby residences or businesses. These waste discharge requirements shall not take effect if the Executive Officer finds that significant public controversy has arisen or will likely arise from the issuance of these requirements and that these requirements should be considered at a regularly scheduled Regional Board meeting.

B. PROHIBITIONS

1. The discharge of waste to land that is not under the control of the discharger is prohibited.

2. The discharge of any waste not specifically regulated by this Order is prohibited except as regulated under another Order issued by the Regional Board or discharged to a permitted facility.

3. The discharge of waste from the aeration or treatment of soil to surface or groundwaters is prohibited.

4. The discharge of waste or the placement of contaminated material on property not specified in the report of waste discharge submitted pursuant to A(1) of this Order is prohibited.

5. Creation of a pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code (CWC) is prohibited. [Health and Safety Code, Section 5411]

6. Contaminated soil aeration and treatment activities between October 1 and May 15 are prohibited without written authorization of the Regional Board Executive Officer.

7. Contaminated soil aeration or treatment activities, including storage, which are not located on an impermeable surface are prohibited.

8. Contaminated soil aeration and treatment activities, including storage, in areas where access by the general public is not controlled is prohibited.

9. Contaminated soil aeration activities, including storage, in areas which are not posted as waste treatment and/or storage facilities are prohibited.

10. The exposure to precipitation of contaminated soil in storage and/or in the process of being remediated is prohibited.

C. PROVISIONS

1. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel.

2. All treatment and disposal facilities shall be in compliance with appropriate County and City requirements.

3. Severability

Provisions of these waste discharge requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected.

4. Operation and Maintenance

The discharger must maintain in good working order and operate as efficiently as possible any facility of control system installed by the discharger to achieve compliance with the waste discharge requirements.

5. Change in Discharge

The discharger must promptly report to the Board any material change in the character, location or volume of the discharge.

6. Change in Ownership

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which must be forwarded to this office.

7. Vested Rights

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the discharger form his liability under federal, State or local laws, nor create a vested right for the discharger to continue the waste discharge.

8. Monitoring

The discharger must comply with the Contingency Planning and Notification Requirements Order No. 74-151, any specifically issued Monitoring and Reporting Program for the discharger's facility, the operations and maintenance plan, and any modifications to these documents as specified by the Executive Officer.

Such documents are attached to this Order and incorporated herein. The discharger shall file with the Board technical reports on self monitoring work performed according to the detailed specifications contained in any monitoring and reporting work performed according to the detailed specifications contained in any monitoring and reporting program as directed by the Board.

Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the discharger, analyses performed by a noncertified laboratory will be accepted provided:

a. A quality assurance/quality control program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by staff of the Board. The quality assurance/quality control program must conform to EPA or State Department of Health Services guidelines.

b. The laboratory will become certified within the shortest practicable time if the State certification program is resumed.

9. Inspections

This discharger shall permit authorized staff of the Board:

a. entry upon premises in which an effluent source is located or in which any required records are kept;

b. access to copy any records required to be kept under terms and conditions of the Order;

c. inspection of monitoring equipment or records;

d. sampling of any discharge.

10. Noncompliance

In the event the discharger is unable to comply with any of the conditions of this Order due to:

a. breakdown of waste treatment equipment;

b. accidents caused by human error of negligence;

c. other causes such as acts of nature;

The discharger must notify the Executive Officer by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of telephone notification. The written notification shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps are being taken to prevent the problem from recurring.

11. Revision of Requirements

This board requires the discharger to file a report of waste discharge at least 120 days before making any material change or proposed change in character, location, or volume of the discharge.

12. These waste discharge requirements expire 24 months after issuance pursuant to condition A(2) of this Order and no further recision action is necessary.

13. The disposal of aerated and/or treated soils upon completion of aeration/treatment shall not be further regulated if the soils do not contain levels of petroleum hydrocarbons or chlorinated solvents in excess of laboratory detection limits.[1] Additional disposal options for soils containing levels of petroleum hydrocarbons or chlorinated solvents in excess of the laboratory detection limits will be evaluated on a case-by-case basis.

Certification

I, Benjamin D. Kor, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region, on August 27, 1992.

Benjamin D. Kor
Executive Officer

(wdr)

[1] For the purpose of this Permit, levels of detection are as follows:

CONSTITUENT	UNITS	DETECTION LIMIT
Petroleum Hydrocarbons	mg/kg	1.0
Benzene	mg/kg	0.005
Toluene	mg/kg	0.005
Xylene	mg/kg	0.005
Ethylbenzene	mg/kg	0.005

APPENDIX B

FIELD DATA

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 1

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 11-22-96 / DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Quarterly Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Overcast to semi-clear	TECHNICIAN David R. Lain
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0823. Then I took all water levels de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Then I purged mw-1, mw-3 mw-4, and mw-2 in this order with a 2" TEFLON bailer. I de-cond the 2" bailer after purging each well by scrubbing it with liquinox then rinsing it with DI water. All purge water from all 4 wells went into 1 55 gal. drum and was labeled accordingly. Then I sampled mw-1, mw-3, mw-4, and mw-2 in this order with disposable bailers and the tri-pod and reel.
QC-1 came out of mw-4.
Then I secured all wells with caps and lids.
Left site for NCL at 1315.

Mileage 27 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Lain

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

APPENDIX K

JOB NO. : 930121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	8/23/96 DEP	26.69	10.38	16.31
MW-2		26.04	8.67	17.37
MW-3		24.445	16.19	8.255
MW-4		27.72	10.01	17.71
P-1		28.57	12.88	15.69
MW-1	9/26/96 DEP	26.69	12.22	14.47
MW-2		26.04	9.06	16.98
MW-3		24.445	16.05	8.395
MW-4		27.72	10.67	17.05
P-1		28.57	DRY	—
MW-1	10/28/96 DEP	26.69	13.19	13.50
MW-2		26.04	7.73	18.31
MW-3		24.445	15.49	8.955
MW-4		27.72	9.34	18.38
P-1		28.57	13.34	15.23
MW-1	11/22/98 DEP	26.69	6.82	19.87
MW-2		26.04	4.22	21.82
MW-3		24.445	14.44	10.005
MW-4		27.72	5.90	21.82
P-1		28.57	9.03	19.54

SHN

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-22-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-1	ELEVATION	
TOTAL DEPTH	14.78	WATER	
DEPTH		ELEVATION	
TO WATER	6.82		

HT OF WATER COLUMN 7.96 X(0.~~66~~ .16)=CASING VOL 1.27 x 3 = 3.82

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
6.82	0918	0920	1.50 gal.	317	57.8°	6.49
		0925	2.75 gal.	310	57°	6.59
		0930	4 gal.	309	57.1°	6.52

TOTAL 4.0 gal.

INITIAL WATER VOLUME 1.3 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1200

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 6.86 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K
FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-22-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-2	ELEVATION	
TOTAL DEPTH	12.05	WATER	
DEPTH		ELEVATION	
TO WATER	4.22		

HT OF WATER COLUMN 7.83 X(0.~~50~~ .16)=CASING VOL 1.25 x 3 = 3.76

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
4.22	1108	1110	1.25 gal.	249	61.1°	6.06
		1114	2.50 gal.	302	60.5°	6.13
		1119	3.75 gal.	308	60.6°	6.13

TOTAL 3.8 gal.

INITIAL WATER VOLUME 1.3 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1300

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 4.29 at sampling time

APPENDIX K
FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-22-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-3	ELEVATION	
TOTAL DEPTH	25.90	WATER	
DEPTH		ELEVATION	
TO WATER	14.44		

HT OF WATER COLUMN 11.46 X(0.~~66~~ .16)=CASING VOL 1.83 x 3 = 5.50

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
14.44	0948	0951	2 gal.	699	58.6°	6.80
	Empty	1000	3.75 gal.	673	58.1°	6.86
	Empty	1020	4.50 gal.	653	58.3°	7.01

TOTAL 4.5 gal.

INITIAL WATER VOLUME 1.8 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1220

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & lign., TPHD/mo

LABORATORY NCL

REMARKS

Recharged to 20.68 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-22-96
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-4	ELEVATION	
TOTAL DEPTH	14.54	WATER	
DEPTH		ELEVATION	
TO WATER	5.90		

HT OF WATER COLUMN 8.64 X(0.~~66~~ .16)=CASING VOL 1.38 x 3 = 4.15

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
5.90	1043	1045	1.50 gal.	352	62.3°	6.41
		1050	3 gal.	336	62.1°	6.36
		1054	4.25 gal.	337	61.8°	6.39

TOTAL 4.3 gal.

INITIAL WATER VOLUME 1.4 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1240

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO

LABORATORY NCL

REMARKS QC-1

Recharged to 5.99 at sampling time

E:\FORMS\FIELD.LOG

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Dennis Sullivan
Results & Invoice to: Eel River Sawmills
Address: RT 1 Box 459A
Fortuna Ca 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka Ca 95501

TAT: ☐ 24 Hr ☒ 48 Hr ☒ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☒ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☒ Verbal ☐ By: __/__/__
Final Report: FAX ☒ Verbal ☒ By: __/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX	Tann-Lign	Dissolved Metals	TPHD/MO
	MW-1	11/22/96	1200	GW	b	9	X	X	X	X
	MW-3		1220			2	X	X	X	X
	MW-4		1240			3	X	X	X	X
	MW-2		1300			11	X	X	X	X
	QC-1		—			4	X			X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_6H_8O_6Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Dissolved metals to be analyzed
for Cd, Cr, Pb, Ni, Zn
Intact/cold ITB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R Paine	1324 11/22/96		1324

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☒ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100

PAGE 1 of 2

PROJECT NAME: ERS	CLIENT/OWNER: Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO: 1	
GENERAL LOCATION OF WORK: Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE	DATE: 10-28-96	DAY OF WEEK: Monday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER: Marty Lay	
TYPE OF WORK: Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER: Overcast	TECHNICIAN: David R. Laing	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 1530. Then I took all water levels deconing the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.
Left site at 1556.

Mileage 20 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Laing

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

JOB NO. : 930121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	8/23/96 DEP	26.69	10.38	16.31
MW-2		26.04	8.67	17.37
MW-3		24.445	16.19	8.255
MW-4		27.72	10.01	17.71
P-1		28.57	12.88	15.69
MW-1	9/26/96 DEP	26.69	12.22	14.47
MW-2		26.04	9.06	16.98
MW-3		24.445	16.05	8.395
MW-4		27.72	10.67	17.05
P-1		28.57	DRY	—
MW-1	10/28/96 DEP	26.69	13.19	13.50
MW-2		26.04	7.73	18.31
MW-3		24.445	15.49	8.955
MW-4		27.72	9.34	18.38
P-1		28.57	13.34	15.23

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 9-26-96	DAY OF WEEK Thursday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Overcast	TECHNICIAN David R. Paine	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at ~~@~~ 1417. Then I took water levels in this order mw-1, mw-3, P-1, mw-4 and mw-2 de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.
Left site at 1446

Mileage 21 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

GROUND WATER ELEVATIONS

Gate Key

JOB NO. : 930121.100

CLIENT: Eel River Sawmills

LOCATION: Foster Ave. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	8/23/96 DRP	26.69	10.38	16.31
MW-2		26.04	8.67	17.37
MW-3		24.445	16.19	8.255
MW-4		27.72	10.01	17.71
P-1		28.57	12.88	15.69
MW-1	9/26/96 DRP	26.69	12.22	14.47
MW-2		26.04	9.06	16.98
MW-3		24.445	16.05	8.395
MW-4		27.72	10.67	17.05
P-1		28.57	DRY	—

APPENDIX C

ANALYTICAL RESULTS

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9611474

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: RT 1 Box 459A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: ERS Specialty Mill
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX	ANALYSIS: Total Lead	ANALYSIS: Dissolved metals	ANALYSIS: TPHD/MO
	MW-1	11/22/96	1200	GW	b	9	X	X	X	X
	MW-3		1220		b	2	X	X	X	X
	MW-4		1240		b	3	X	X	X	X
	MW-2		1300		b	7	X	X	X	X
	QC-1	↓	—	↓		4	X			X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Dissolved metals to be analyzed are: Cd, Cr, Pb, Ni, Zn

Intact/cold - ITB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R Paine David R Paine	1324 11/22/96	11/27/96	1324

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

NORTH COAST LABORATORIES LTD.

DATE: December 06, 1996

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

ATTENTION: Colin Dazzi

NCL: 96-11-474

ADDENDUM TO CHEMICAL EXAMINATION REPORT

PARAMETER	NOTATIONS
TPHC Diesel	Samples 03B and 05B contain material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. Sample 04B contains material similar to highly degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only. A surrogate is not added to the diesel/motor oil samples because the surrogate elutes in the motor oil range.

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

NORTH COAST LABORATORIES LTD.

Date: 12/06/96

REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 96-11-474

INVOICE # 60055575

Attn: Colin Dazzi

WORK ID: ERS Speciality Mill/930121.10

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
01	MW-1/Dissolved
01	MW-1
02	MW-3
02	MW-3
02	MW-3/Dissolved
02	MW-3
03	MW-4
03	MW-4
03	MW-4/Dissolved
03	MW-4
04	MW-2
04	MW-2
04	MW-2/Dissolved
04	MW-2
05	QC-1
05	QC-1
06	Blank
07	Lab. Control Sample
08	Blank
09	Lab. Control Sample

Comments:

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected
NQ = Not Quantifiable
NR = Not Requested

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/03/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Surrogate:						12/03/96	EPA 602
cis-1,2-dichloroethene	96.7	N/A	% Rec	1.0		12/03/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/03/96	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID

SAMPLE ID: MW-1/Dissolved FRAC.: 01C COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		12/03/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		12/03/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		11/27/96	EPA 239.2

SAMPLE ID: MW-1 FRAC.: 01D COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.97	0.10	mg Tannin/L	1.0		12/05/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/03/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Surrogate:						12/03/96	EPA 602
cis-1,2-dichloroethene	106	N/A	% Rec	1.0		12/03/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/03/96	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID

SAMPLE ID: MW-3/Dissolved FRAC.: 02C COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		12/03/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		12/03/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		11/27/96	EPA 239.2

SAMPLE ID: MW-3 FRAC.: 02D COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	3.1	0.10	mg Tannin/L	1.0		12/05/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 03A COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/03/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Surrogate:						12/03/96	EPA 602
cis-1,2-dichloroethene	95.6	N/A	% Rec	1.0		12/03/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/03/96	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 03B COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	88	50	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID

SAMPLE ID: MW-4/Dissolved FRAC.: 03C COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		12/03/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		12/03/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		11/27/96	EPA 239.2

SAMPLE ID: MW-4 FRAC.: 03D COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.3	0.10	mg Tannin/L	1.0		12/05/96	SM 5550B

APPENDIX K

SAMPLE ID: MW-2 FRAC.: 04A COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/03/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Surrogate:						12/03/96	EPA 602
cis-1,2-dichloroethene	108	N/A	% Rec	1.0		12/03/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/03/96	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 04B COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	300	50	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID

SAMPLE ID: MW-2/Dissolved FRAC.: 04C COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		12/03/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		12/03/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		11/27/96	EPA 239.2

SAMPLE ID: MW-2 FRAC.: 04D COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.96	0.10	mg Tannin/L	1.0		12/05/96	SM 5550B

APPENDIX K

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/03/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Surrogate:						12/03/96	EPA 602
cis-1,2-dichloroethene	79.2	N/A	% Rec	1.0		12/03/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/03/96	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05B COLLECTED: 11/22/96 RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	80	50	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/03/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/03/96	EPA 602
Surrogate:						12/03/96	EPA 602
cis-1,2-dichloroethene	79.7	N/A	% Rec	1.0		12/03/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/03/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/27/96	12/04/96	EPA3510GCFID

APPENDIX K

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	64.0	N/A	% Rec	1.0		12/03/96	EPA 602
Benzene	76.4	N/A	% Rec	1.0		12/03/96	EPA 602
Toluene	77.7	N/A	% Rec	1.0		12/03/96	EPA 602
Ethylbenzene	78.7	N/A	% Rec	1.0		12/03/96	EPA 602
m,p Xylene	77.0	N/A	% Rec	1.0		12/03/96	EPA 602
o Xylene	74.7	N/A	% Rec	1.0		12/03/96	EPA 602
Surrogate:						12/03/96	EPA 602
cis-1,2-dichloroethene	93.2	N/A	% Rec	1.0		12/03/96	EPA 602
TPHC Gasoline/water	78.5	N/A	% Rec	1.0		12/03/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	112	N/A	% Rec	1.0	11/27/96	12/04/96	EPA3510GCFID
TPHC - Motor Oil	80.4	N/A	% Rec	1.0	11/27/96	12/04/96	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 08A COLLECTED: N/A RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		12/03/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		12/03/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		12/03/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		11/27/96	EPA 239.2
Tannin and Lignin	ND	0.10	mg Tannin/L	1.0		12/05/96	SM 5550B

SAMPLE ID: Lab. Control Sample FRAC.: 09A COLLECTED: N/A RECEIVED: 11/22/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	85.8	N/A	% Rec	1.0		12/03/96	EPA 6010A
Chromium	102	N/A	% Rec	1.0		12/03/96	EPA 6010A
Nickel	104	N/A	% Rec	1.0		12/03/96	EPA 6010A
Zinc	102	N/A	% Rec	1.0		12/03/96	EPA 6010A
Lead	91.5	N/A	% Rec	4.0		11/27/96	EPA 239.2
Tannin and Lignin	110	N/A	% Rec	1.0		12/05/96	SM 5550B

APPENDIX K

SHN CONSULTING ENGINEERS & GEOLOGISTS

Reference: 930121.100

April 9, 1997

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: FIRST QUARTER 1997 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

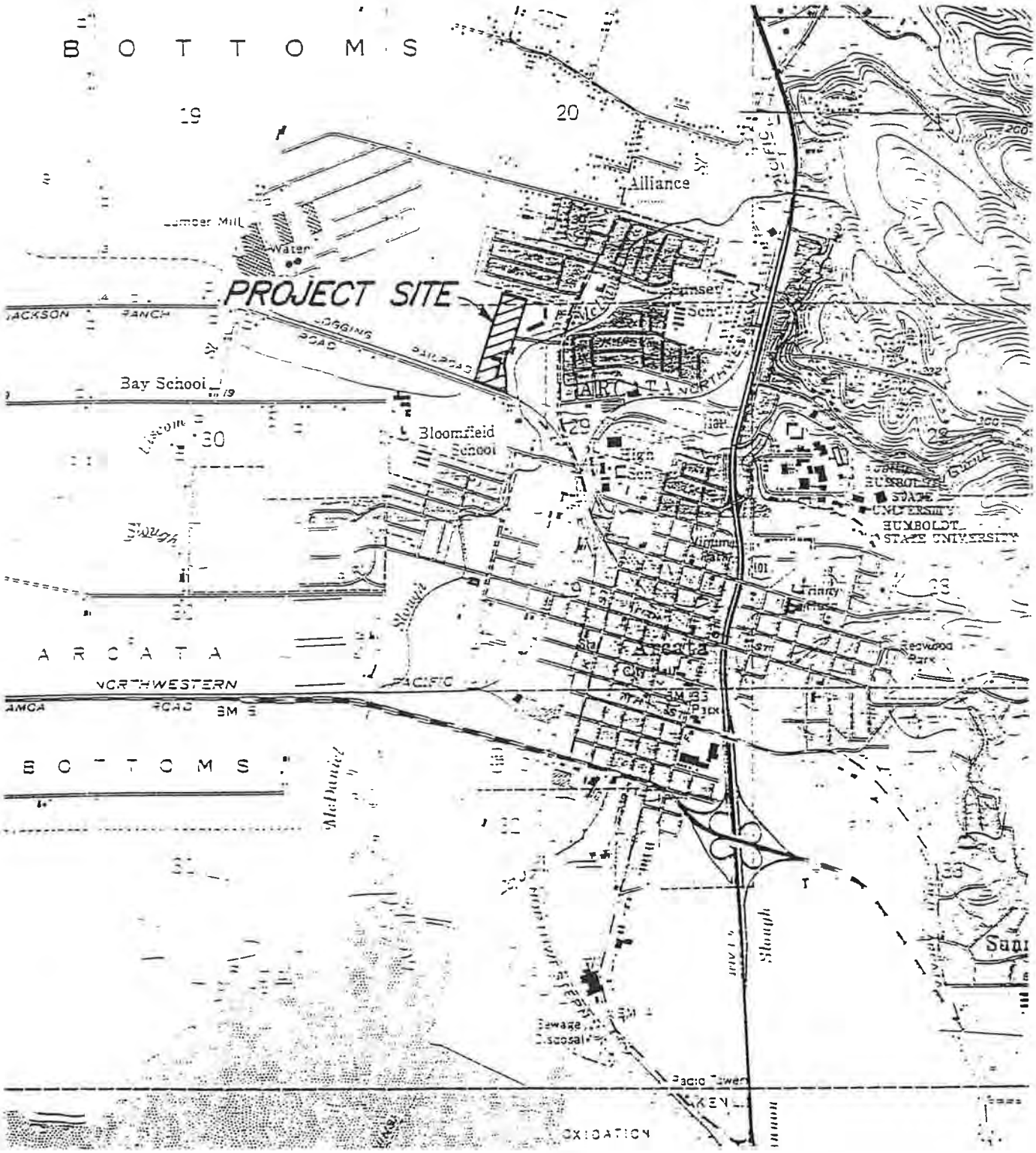
Dear Mr. Dell'Osso:

This First Quarter 1997 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995, letter to ERS (Attachment A). The report summarizes groundwater level and sampling data collected during December 1996, and January and February 1997. Groundwater monitoring well quarterly sampling was conducted in February 1997. Field notes and certified laboratory analytical reports follow in Attachments B and C, respectively.

SHN submitted a letter (dated February 10, 1997) to your office for additional clarification relative to previously proposed off-site soil remedial actions. In accordance with our discussion of February 25, 1997, I will respond to the issue of SHN proposed cessation of sampling the groundwater for Tannins and Lignins after presenting the following quarterly information.

Table 1 is a summary of the groundwater elevations measured at monitoring wells MW-1, M-2, MW-3, MW-4, and piezometer P-1 during this reporting period.

APPENDIX K



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

FIGURE 1

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	12/27/96	21.41	24.28
MW-2	12/27/96	3.09	22.95
MW-3	12/27/96	9.35	15.095
MW-4	12/27/96	3.72	24.00
P-1	12/27/96	4.14	24.43
MW-1	1/27/97	2.41	24.28
MW-2	1/27/97	3.13	22.91
MW-3	1/27/97	7.09	17.335
MW-4	1/27/97	3.80	23.92
P-1	1/27/97	4.00	24.57
MW-1	2/28/97	2.64	24.05
MW-2	2/28/97	3.77	22.27
MW-3	2/28/97	8.82	15.625
MW-4	2/28/97	4.96	22.76
P-1	2/28/97	7.25	21.32

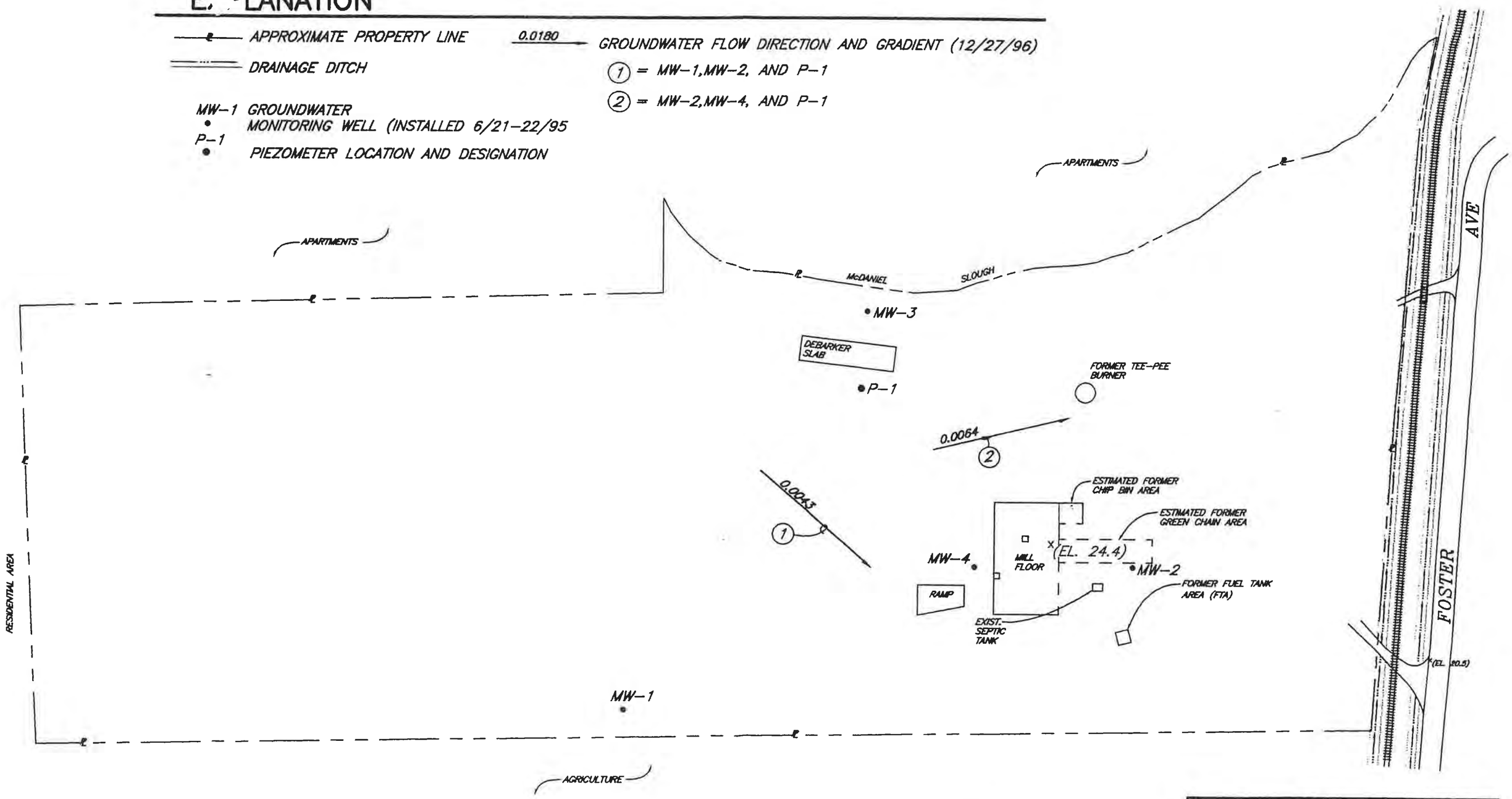
Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Using the data collected, SHN calculated groundwater flow direction and gradient for the months of December 1996, and January and February 1997. Data collected indicates that the groundwater level in piezometer P-1 and MW-3 lowered abruptly in February relative to the other monitoring well groundwater levels. A rise in the groundwater level of MW-3, and higher than normal levels in P-1, during January was most likely due to acquifer recharge effects of the previous month's above normal and heavy rainfall. The groundwater flow direction and gradient for the months of December, January, and February are represented, by two cluster configurations of monitoring wells (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figures 2, 3, and 4, respectively. Well cluster MW-1, MW-2, P-1 is representative of the groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area. The groundwater flow direction change between last quarter (November 1996) and this quarter (December and January), followed by a return in February to the November 1996 direction, indicates shallow gradients with an elevated water table across the property during December and January.

Groundwater samples were collected on February 28, 1997, for all required constituents from wells MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data, including CO_2, DO, EC, and pH). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. Table 2 summarizes the first quarter 1997 sample analytical results. See Appendix C for analytical results and chain-of-custody documentation.

The groundwater flow direction during February was comparable with the groundwater flow direction during November 1996, thus maintaining the "downgradient" from source site well positions. Groundwater analytical results indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) were below the method reporting limits. Dissolved metals of concern are all below California drinking water standards (Maximum Contaminant Levels). Tannins and Lignins were detected, at low levels, in all wells, and do not pose a threat to groundwater quality (discussion to follow later).

EXPLANATION

- APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95
- P-1 PIEZOMETER LOCATION AND DESIGNATION
- 0.0180 GROUNDWATER FLOW DIRECTION AND GRADIENT (12/27/96)
- (1) = MW-1, MW-2, AND P-1
- (2) = MW-2, MW-4, AND P-1



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

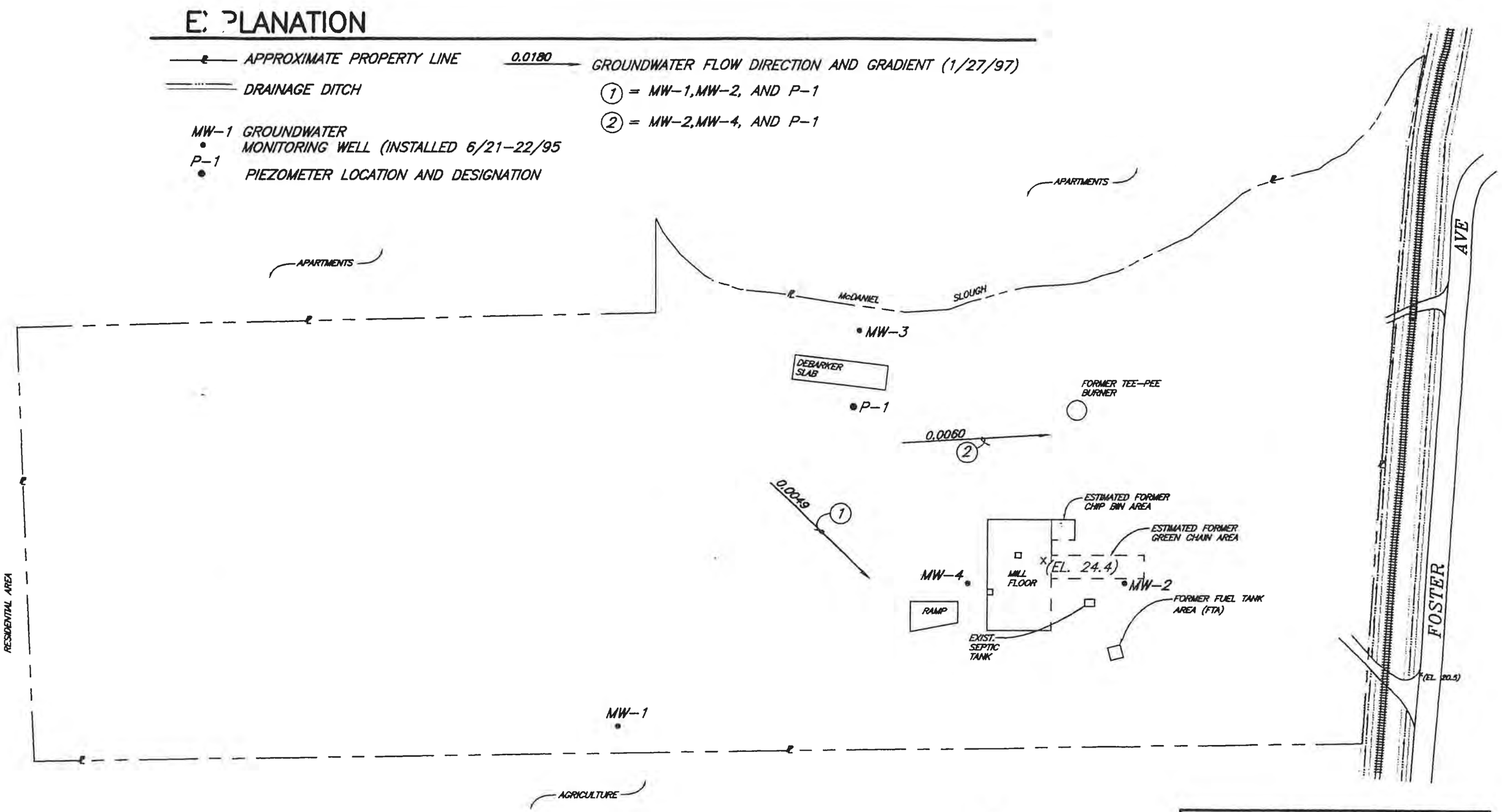
GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
MARCH, 1997

FIGURE **2**

SHN

930121.7



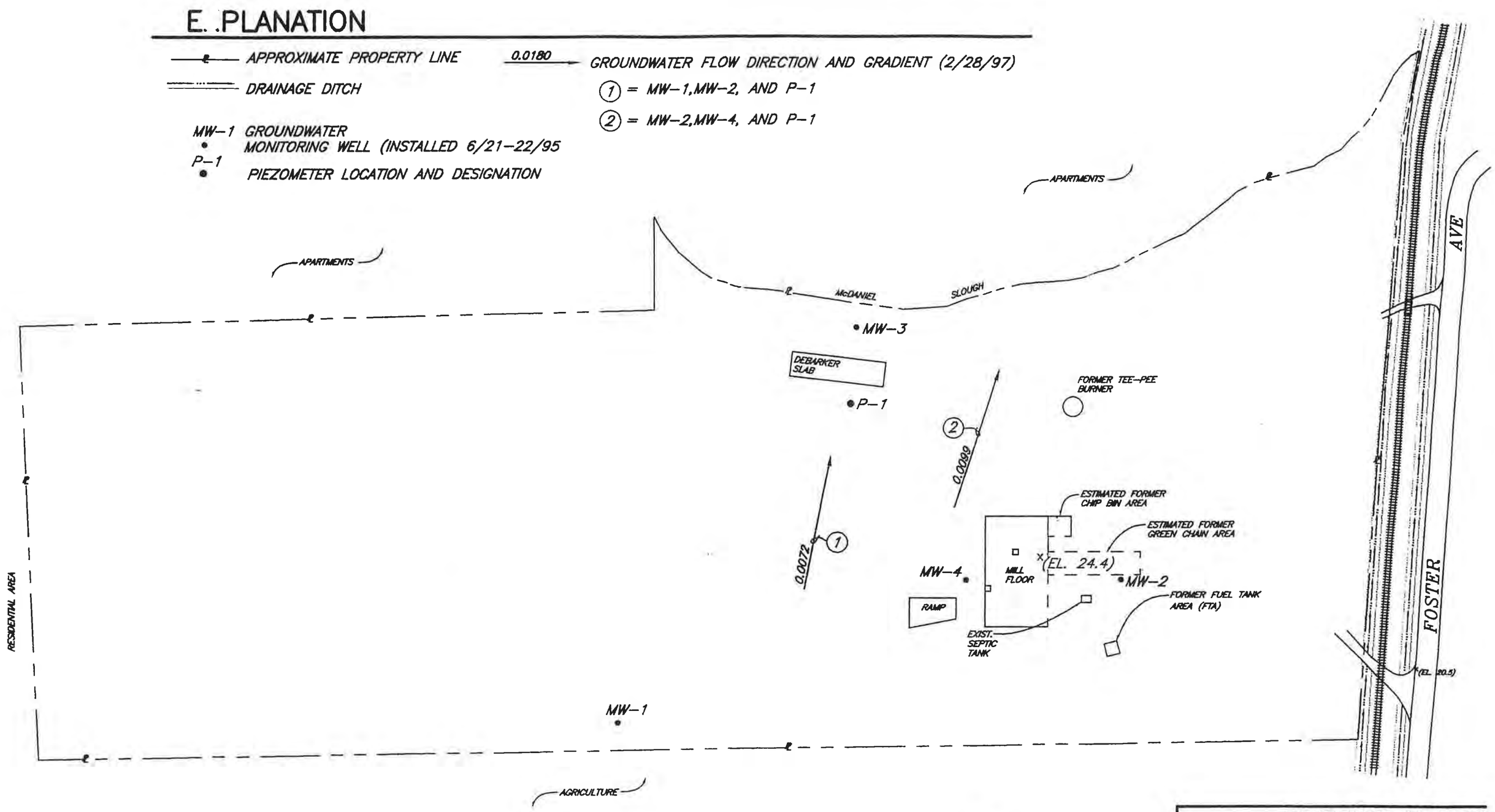
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
MARCH, 1997

FIGURE **3**

930121.100



SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
MARCH, 1997

FIGURE 4

93_ _21F_ 4

To ensure the reproducibility of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected during this monitoring event. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-2), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses.

TABLE 2

SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Metals[a)] (ug/L)	Tannins & Lignins (mg Tannin/L)
MW-1	2/28/97	<0.50	<50	<50	<500	<20	0.89
MW-2	2/28/97	<0.50	<50	<50	<500	<20	1.3
MW-3	2/28/97	<0.50	<50	<50	<500	<20	4.2
MW-4	2/28/97	<0.50	<50	<50	<500	<20	2.1
QC-1/MW-2	2/28/97	<0.50	<50	<50	<500	---	---

[a] Chromium (Cr), Lead (Pb), Nickel (Ni), Zinc (Zn)--see individual lab reports
QC-1 = Quality Control Sample
--- = not sampled

Quarterly monitoring and reporting will continue, for these existing monitoring wells and piezometer P-1. Monthly water level measurements in all monitoring wells and P-1 will be continued, as requested by the HCDEH.

SHN proposes that the quarterly analyses for Tannins and Lignins be dropped from the required analytical suite due to the consistently low documented levels of these constituents. The technical basis for this request is as follows:

- No regulatory action level has been established for Tannins and Lignins.
- California Department of Fish and Game (CDFG) requires that the surface receiving waters to a discharge of this type undergo less than a 20% increase in turbidity and less than a 0.5 increase or decrease in pH. Both of the CDFG requirements are being met at the site. The impact of site groundwater on Janes Creek is negligible.

- Potential residential development at the site would rely upon City supplied potable water services. In any case, typical water filtration for potable use would mitigate the documented groundwater constituents.
- SHN suggests discussion of this issue with HCDEH and RWQCB staff, as this issue is frequently encountered in ongoing monitoring of forest lands and associated industry operations.

The metals analyses performed in the First Quarter 1997 monitoring event, as in previous quarters, indicated dissolved metals values below the MCL. SHN proposes deletion of the metals constituents from the required quarterly sampling analytical suite, with only one annual dissolved metals sampling to be conducted during the Fall (low groundwater period) sampling event. Table 3 presents a summary of groundwater monitoring results for the four quarters of 1996 for reference to the above proposal.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
Exp 3-31-94
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:lms
Attachments (A, B,& C, plus 4 figures)
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

APPENDIX A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

APPENDIX B

FIELD DATA

APPENDIX K

DAIL FIELD REPORT-

JOB NO 930121.100

PAGE 1 of 1

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE	DATE 12-27-96	DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Overcast	TECHNICIAN David R. Paine	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING			

Arrived on site at 1009. Then I took water levels in this order mw-1, mw-3, P-1, mw-4 and mw-2. mw-2 has an ant colony inside steel stand pipe. I deconed the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Left site at 1045.

Mileage 20 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

JOB NO. : 930121.100 **APPENDIX K**

CLIENT: Eel River Sawmills

LOCATION: Foster Ave. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	8/23/96 DEP	26.69	10.38	16.31
MW-2		26.04	8.67	17.37
MW-3		24.445	16.19	8.255
MW-4		27.72	10.01	17.71
P-1		28.57	12.88	15.69
MW-1	9/26/96 DEP	26.69	12.22	14.47
MW-2		26.04	9.06	16.98
MW-3		24.445	16.05	8.395
MW-4		27.72	10.67	17.05
P-1		28.57	DRY	—
MW-1	10/28/96 DEP	26.69	13.19	13.50
MW-2		26.04	7.73	18.31
MW-3		24.445	15.49	8.955
MW-4		27.72	9.34	18.38
P-1		28.57	13.34	15.23
MW-1	11/22/96 DEP	26.69	6.82	19.87
MW-2		26.04	4.22	21.82
MW-3		24.445	14.44	10.005
MW-4		27.72	5.90	21.82
P-1		28.57	9.03	19.54
MW-1	12/27/96 DEP	26.69	2.41	24.28
MW-2		26.04	3.09	22.95
MW-3		24.445	9.35	15.095
MW-4		27.72	3.72	24.00
~~P-1~~ P-1		28.57	4.14	24.43

APPENDIX K

DAIL FIELD REPORT

JOB NO 930121.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills Inc	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE	DATE 1-27-97 / DAY OF WEEK Monday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Overcast	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING		

Arrived on site at 1519. Then I took water levels in this order mw-1, mw-3, P-1, mw-4 and mw-2 de-con the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.
Left site at 1600.

Mileage 20 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

APPENDIX K

GROUND WATER ELEVATIONS

JOB NO. :930121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Av. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	1/22/93 DRP	26.69	2.41	24.28
mw-2		26.04	3.13	22.91
mw-3		24.445	7.09	17.355
mw-4		27.72	3.80	23.92
P-1		28.57	4.00	24.57

SHN

APPENDIX K

DAIL FIELD REPORT

JOB NO 930121.100
PAGE 1-7

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills Inc.	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 2-28-97 / DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Loy
TYPE OF WORK Quarterly Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Clear	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0655. Then I took all water levels de-toning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Then I purge mw-1 mw-3 mw-4 and mw-2 in this order with a 2" TEFLON bailer. All purge water from all 4 wells went into a 55 gal. drum located by mw-1. I de-toned the 2" bailer after purging each well by scrubbing it with liquinox then rinsing it with DI water. Then I sampled mw-1, mw-3, mw-4 and mw-2 in this order with disposable bailers and the tri-pod and reel. Then I secured all 4 wells with caps and lids and secured and labeled the 55 gal. drums. Left site for NCL at 1228.

Mileage: 27 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

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GROUND WATER ELEVATIONS

APPENDIX K

JOB NO. :930121.10C
CLIENT: Eel River Sawmills
LOCATION: Foster Av. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	1/27/97 DRP	26.69	2.41	24.28
mw-2		26.04	3.13	22.91
mw-3		24.445	7.09	17.355
mw-4		27.72	3.80	23.92
P-1		28.57	4.00	24.57
mw-1	2/28/97 DRP	26.69	2.64	24.05
mw-2		26.04	3.77	22.27
mw-3		24.445	8.82	15.625
mw-4		27.72	4.96	22.76
P-1		28.57	7.25	21.32

SHN

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	2-28-97
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-1	ELEVATION	
TOTAL DEPTH	14.78	WATER	
DEPTH		ELEVATION	
TO WATER	2.64		

HT OF WATER COLUMN 12.14 X(0.~~66~~ .16)=CASING VOL 1.94 x 3 = 5.83

DEPTH		TIME		TIME	WATER REMOVED	EC	TEMP	pH
CO2	DO	Eh	2.64	0753	0 gal.			
				0756	2 gal.	354	47.2°	5.82
				0801	4 gal.	351	46.4°	5.87
				0807	6 gal.	354	46.8°	5.92
80	10.4	195		0815	6.50 gal.			

TOTAL 6.5 gal.

INITIAL WATER VOLUME 1.9 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1130

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 2.67 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	2-28-97
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-3	ELEVATION	
TOTAL DEPTH	25.90	WATER	
DEPTH		ELEVATION	
TO WATER	8.82		

HT OF WATER COLUMN 17.08 X(0.~~56~~ .16)=CASING VOL 2.73 X 3 = 8.20

DEPTH		TIME		TIME	WATER REMOVED	EC	TEMP	pH
CO_2	DO	Eh	8.82	0852	0 gal.			
				0856	2.75 gal.	1139	50.2°	6.61
			Empty	0903	4.50 gal.	1121	49.8°	6.60
160	7.1	-20	Empty	0921	5.50 gal.	1105	49.7°	6.63

TOTAL 5.5 gal.

INITIAL WATER VOLUME 2.7 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1145

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 15.23 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 930121.100 DATE 2-28-97

CLIENT Eel River Sawmills SAMPLER David R. Lain

WELL NO. MW-4 ELEVATION

TOTAL DEPTH 14.54 WATER

DEPTH ELEVATION

TO WATER 4.96

HT OF WATER COLUMN 9.58 X(0.16)=CASING VOL 1.53 x 3 = 4.60

DEPTH		TIME		TIME	WATER REMOVED	EC	TEMP	pH
CO_2	DO	Eh	4.96	0943	0 gal.			
				0946	1.50 gal.	336	51.1°	6.08
				0950	3 gal.	342	51°	6.02
				0955	4.75 gal.	338	50.6°	6.03
110	6.5	70		0959	5 gal.			
					--			

TOTAL 5.0 gal.

INITIAL WATER VOLUME 1.5 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1200

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 5.00 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	2-28-97
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-2	ELEVATION	
TOTAL DEPTH	12.05	WATER	
DEPTH		ELEVATION	
TO WATER	3.77		

HT OF WATER COLUMN 8.28 X(0.16)=CASING VOL 1.32 x 3 = 3.97

DEPTH		TIME		TIME	WATER REMOVED	EC	TEMP	pH
CO_2	DO	Eh	3.77	1023	0 gal.			
				1026	1.50 gal.	303	50.9°	5.83
				1030	2.75 gal.	321	50.7°	5.89
[illegible]		?		1034	4 gal.	331	50.9°	5.89
80	6.4	106		1039	4.50 gal.			

TOTAL 4.5 gal.

INITIAL WATER VOLUME 1.3 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pid and reel

SAMPLE TIME 1215

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO

LABORATORY NCL

REMARKS QC-1

Recharged to 3.82 at sampling time

APPENDIX K

P. 1 of 1

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt 1 Box 459 A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Loy
812 W. Wabash Ave
Eureka, Ca. 95501

PROJECT INFORMATION

Project Number: 935121.100
Project Name: ERS Speciality Mill
Purchase Order Number:

	TPHG/BTEX	Metals Dissolved	Total Metals	TPHD/MO
PRESERVATIVE	5			
CONTAINER	9	3	2	7

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*		TPHG/BTEX	Metals Dissolved	Total Metals	TPHD/MO
	mw-1	2/24/97	1130	GW	G	X	X	X	X
	mw-2	↓	1145	↓	G	X	X	X	X
	mw-3	↓	1200	↓	G	X	X	X	X
	mw-4	↓	1215	↓	G	X	X	X	X
	TB-1	↓	—	↓	A	X			X

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5-7 Day
☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Cd, Cr, Pb, Ni, Zn + ITB

SAMPLES INTACT & TEMP N/A
(CIRCLE ONE)
RECENTLY SAMPLED
NOT IN COOLER

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R Parr David R Parr	2/24/97 1235	Laura Miller	2/24/97 1235

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX C

ANALYTICAL RESULTS

APPENDIX K

NORTH COAST LABORATORIES LTD.

Date: 03/07/97 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 97-02-573

INVOICE # 60057438

Attn: Dennis Scott

WORK ID: 930121.100/ERS Speciality

REPORT CERTIFIED BY

Dan Hines (for RG)
Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
01	MW-1
01	MW-1
02	MW-3
02	MW-3
02	MW-3
02	MW-3
03	MW-4
03	MW-4
03	MW-4
03	MW-4
04	MW-2
04	MW-2
04	MW-2
04	MW-2
05	QC-1
05	QC-1
06	Blank
07	Lab. Control Sample

Comments:

A surrogate is not added to the diesel/motor oil samples because the surrogate elutes in the motor oil range.

Notes and Definitions:

Limit = Reporting Limit NQ = Not Quantifiable
ND = None Detected NR = Not Requested

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/05/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Surrogate:						03/05/97	EPA 602
cis-1,2-dichloroethene	97.1	N/A	% Rec	1.0		03/05/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/05/97	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		03/05/97	EPA 6010A
Chromium	ND	5.0	ug/L	1.0		03/05/97	EPA 6010A
Nickel	21	20	ug/L	1.0		03/05/97	EPA 6010A
Zinc	23	20	ug/L	1.0		03/05/97	EPA 6010A
Lead	ND	20	ug/L	4.0		03/07/97	EPA 200.9

SAMPLE ID: MW-1 FRAC.: 01C COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.89	0.10	mg Tannin/L	1.0		03/04/97	SM 5550B

SAMPLE ID: MW-1 FRAC.: 01D COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID

APPENDIX K

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/05/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Surrogate:						03/05/97	EPA 602
cis-1,2-dichloroethene	109	N/A	% Rec	1.0		03/05/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/05/97	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		03/05/97	EPA 6010A
Chromium	ND	5.0	ug/L	1.0		03/05/97	EPA 6010A
Nickel	ND	20	ug/L	1.0		03/05/97	EPA 6010A
Zinc	ND	20	ug/L	1.0		03/05/97	EPA 6010A
Lead	ND	20	ug/L	4.0		03/07/97	EPA 200.9

SAMPLE ID: MW-3 FRAC.: 02C COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	4.2	0.20	mg Tannin/L	2.0		03/04/97	SM 5550B

SAMPLE ID: MW-3 FRAC.: 02D COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 03A COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/05/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Surrogate:						03/05/97	EPA 602
cis-1,2-dichloroethene	86.5	N/A	% Rec	1.0		03/05/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/05/97	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 03B COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		03/05/97	EPA 6010A
Chromium	ND	5.0	ug/L	1.0		03/05/97	EPA 6010A
Nickel	21	20	ug/L	1.0		03/05/97	EPA 6010A
Zinc	80	20	ug/L	1.0		03/05/97	EPA 6010A
Lead	ND	20	ug/L	4.0		03/07/97	EPA 200.9

SAMPLE ID: MW-4 FRAC.: 03C COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	2.1	0.10	mg Tannin/L	1.0		03/04/97	SM 5550B

SAMPLE ID: MW-4 FRAC.: 03D COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID

APPENDIX K

SAMPLE ID: MW-2 FRAC.: 04A COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/05/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Surrogate:						03/05/97	EPA 602
cis-1,2-dichloroethene	101	N/A	% Rec	1.0		03/05/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/05/97	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 04B COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		03/05/97	EPA 6010A
Chromium	ND	5.0	ug/L	1.0		03/05/97	EPA 6010A
Nickel	20	20	ug/L	1.0		03/05/97	EPA 6010A
Zinc	74	20	ug/L	1.0		03/05/97	EPA 6010A
Lead	ND	20	ug/L	4.0		03/07/97	EPA 200.9

SAMPLE ID: MW-2 FRAC.: 04C COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.3	0.10	mg Tannin/L	1.0		03/04/97	SM 5550B

SAMPLE ID: MW-2 FRAC.: 04D COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID

APPENDIX K

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/05/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/05/97	EPA 602
Surrogate:						03/05/97	EPA 602
cis-1,2-dichloroethene	101	N/A	% Rec	1.0		03/05/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/05/97	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05B COLLECTED: 02/28/97 RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/04/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/04/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/04/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/04/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/04/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/04/97	EPA 602
Surrogate:						03/04/97	EPA 602
cis-1,2-dichloroethene	85.2	N/A	% Rec	1.0		03/04/97	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		03/05/97	EPA 6010A
Chromium	ND	5.0	ug/L	1.0		03/05/97	EPA 6010A
Nickel	ND	20	ug/L	1.0		03/05/97	EPA 6010A
Zinc	ND	20	ug/L	1.0		03/05/97	EPA 6010A
Lead	ND	20	ug/L	4.0		03/07/97	EPA 200.9
TPHC Gasoline/water	ND	50	ug/L	1.0		03/04/97	EPA5030GCFID

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/Water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/04/97	03/07/97	EPA3510GCFID
Tannin and Lignin	ND	0.10	mg Tannin/L	1.0		03/04/97	SM 5550B

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 02/28/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/Water							EPA 602
MTBE	69.3	N/A	% Rec	1.0		03/04/97	EPA 602
Benzene	87.6	N/A	% Rec	1.0		03/04/97	EPA 602
Toluene	90.1	N/A	% Rec	1.0		03/04/97	EPA 602
Ethylbenzene	87.1	N/A	% Rec	1.0		03/04/97	EPA 602
m,p Xylene	86.6	N/A	% Rec	1.0		03/04/97	EPA 602
o Xylene	84.8	N/A	% Rec	1.0		03/04/97	EPA 602
Surrogate:						03/04/97	EPA 602
cis-1,2-dichloroethene	99.2	N/A	% Rec	1.0		03/04/97	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	98.0	N/A	% Rec	1.0		03/05/97	EPA 6010A
Chromium	106	N/A	% Rec	1.0		03/05/97	EPA 6010A
Nickel	107	N/A	% Rec	1.0		03/05/97	EPA 6010A
Zinc	111	N/A	% Rec	1.0		03/05/97	EPA 6010A
Lead	97.0	N/A	% Rec	4.0		03/07/97	EPA 200.9
TPHC Gasoline/Water	86.3	N/A	% Rec	1.0		03/04/97	EPA5030GCFID
TPHD & Motor Oil/Water							EPA3510GCFID
TPHC - Diesel	70.1	N/A	% Rec	1.0	03/04/97	03/07/97	EPA3510GCFID
TPHC - Motor Oil	84.3	N/A	% Rec	1.0	03/04/97	03/07/97	EPA3510GCFID
Tannin and Lignin	98.0	N/A	% Rec	1.0		03/04/97	SM 5550B

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

P. 1 of 1

LABORATORY NUMBER: 9702573

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt 1 Box 459 A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

PROJECT INFORMATION

Project Number: 930121.100
Project Name: ERS Speciality Mill
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day ☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: / /
Final Report: FAX ☐ Verbal ☐ By: / /

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PRESERVATIVE						b				
CONTAINER						9	3	2	4	
ANALYSIS						TPHG/BTEX	Metals Dissolved	Tann+Lign	TPHD/mo	
LAB ID	SAMPLE ID	DATE	TIME	MATRIX*						
1	mw-1	2/28/97	1130	GW	6	X	X	X	X	
2	mw-3	↓	1145	↓	6	X	X	X	X	
3	mw-4	↓	1200	↓	6	X	X	X	X	
4	mw-7	↓	1215	↓	6	X	X	X	X	
5	QC-1	↓	—	↓	4	X			X	

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Cd, Cr, Pb, Ni, Zn + 1TB

SAMPLES INTACT & TEMP N/A
(CIRCLE ONE)
RECENTLY SAMPLED + on ice
~~NOT IN COOLER~~

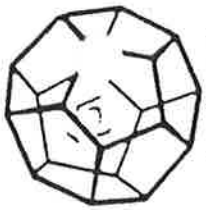
RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R Paris David R. Paris	1235 2/28/97	Laura Miller	2/28/97 1230

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand (circled)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT



NORTH COAST LABORATORIES LTD

March 05, 1997

Dear Valued Client,

Please note that all the drinking water and wastewater metals analyses, with the exception of calcium, magnesium, potassium, and sodium, are now reported in ug/L (ppb) units. If you enter the results in a historical data spreadsheet for comparative reasons, you may need to convert the values to mg/L (ppm) to be consistent with past results. To convert the values from ug/L, divide the sample result by 1000 to obtain results in mg/L. For example, if the result in your report now is 20 ug/L the conversion calculation is: 20÷1000 = 0.020 mg/L

If you have further questions please feel free to call me.

Sincerely,

Michelle Dostal

Michelle Dostal
Quality Assurance Officer

5680 West End Road • Arcata California 95521 • 707-822-4649 • FAX 707-822-6831

APPENDIX K

CONSULTING ENGINEERS
& GEOLOGISTS

812 W Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Selvage, PE
K. Jeff Nelson, PE
Roland S. Johnson Jr. CEG

Reference: 930121.100

June 17, 1997

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

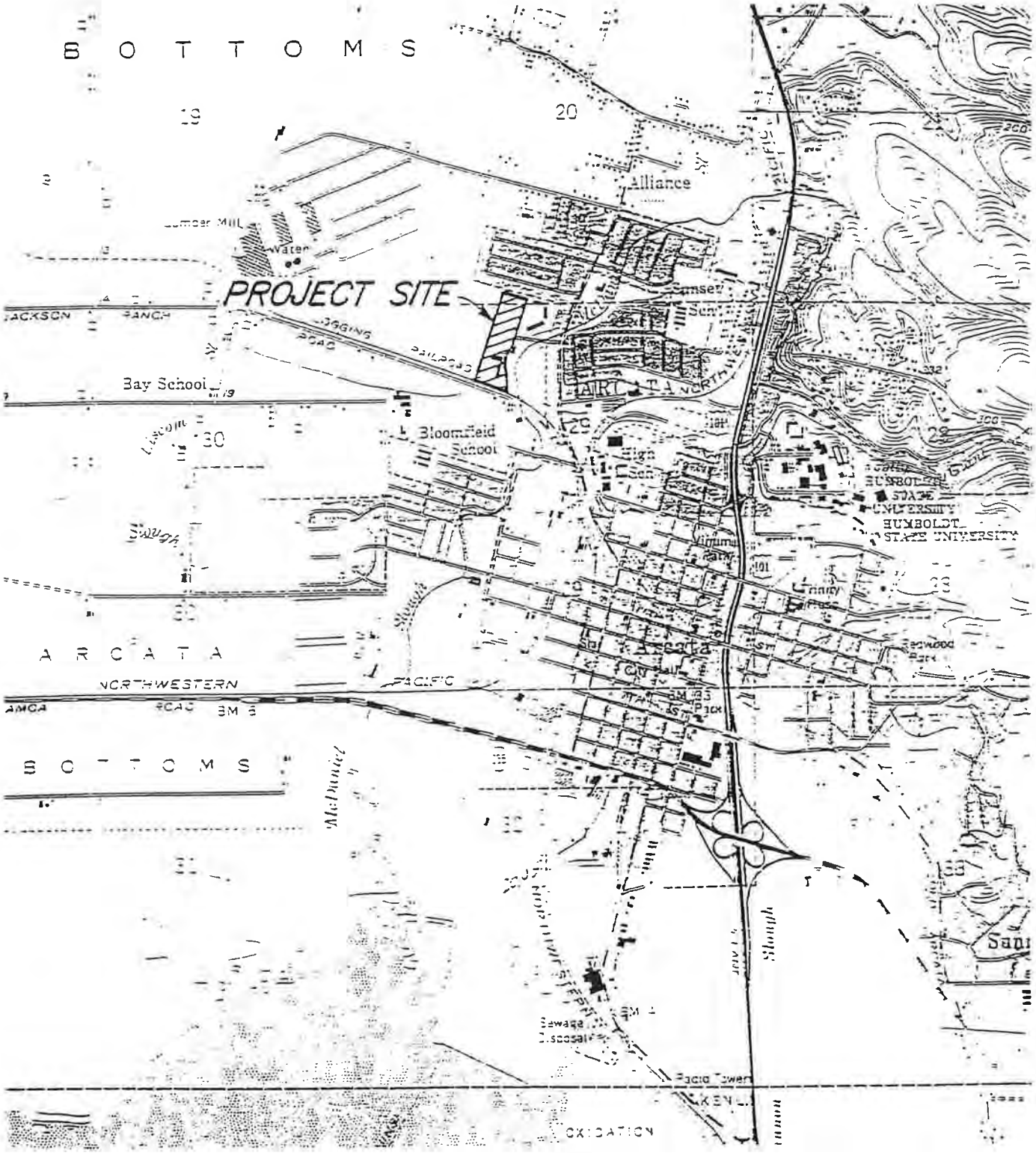
SUBJECT: SECOND QUARTER 1997 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

This Second Quarter 1997 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995, letter to ERS (Attachment A). The report summarizes groundwater level and sampling data collected during March, April, and May 1997. Groundwater monitoring well quarterly sampling was conducted in May 1997. Field notes and certified laboratory analytical reports follow in Attachments B and C, respectively.

Table 1 is a summary of the groundwater elevations measured at monitoring wells MW-1, MW-2, MW-3, MW-4, and piezometer P-1 during this reporting period.

APPENDIX K



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

FIGURE 1

Dale Dell'Osso
Second Quarter 1997 Groundwater Monitoring Report
June 17, 1997

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	3/27/97	3.87	22.82
MW-2	3/27/97	5.38	20.66
MW-3	3/27/97	9.73	14.72
MW-4	3/27/97	6.91	20.81
P-1	3/27/97	9.19	19.38
MW-1	4/24/97	3.39	23.30
MW-2	4/24/97	4.04	22.00
MW-3	4/24/97	10.33	14.11
MW-4	4/24/97	5.41	22.31
P-1	4/24/97	8.09	20.48
MW-1	5/22/97	5.97	20.72
MW-2	5/22/97	6.40	19.64
MW-3	5/22/97	11.27	13.18
MW-4	5/22/97	8.05	19.67
P-1	5/22/97	10.09	18.48

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Using the data collected, SHN calculated groundwater flow direction and gradient for the months of March, April, and May 1997. Data collected indicates that the groundwater level in piezometer P-1 and MW-3 varied less relative to

the other monitoring well groundwater levels. The observed fluctuation in the groundwater level of wells MW-1, MW-2, and MW-4 this quarter appears to be response to acquifer recharge effects of the extended rainfall in the week preceding the April water level reading. The groundwater flow direction and gradient for the months of March, April, and May are represented, by two monitoring well cluster configurations of (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figures 2, 3, and 4, respectively. Well cluster MW-1, MW-2, P-1 is representative of the groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area. The calculated groundwater flow direction between last quarter (February) and this quarter (three months) indicates the same relative direction with minor fluctuation in gradient, thus indicating a return to the historically documented spring/early summer flow direction.

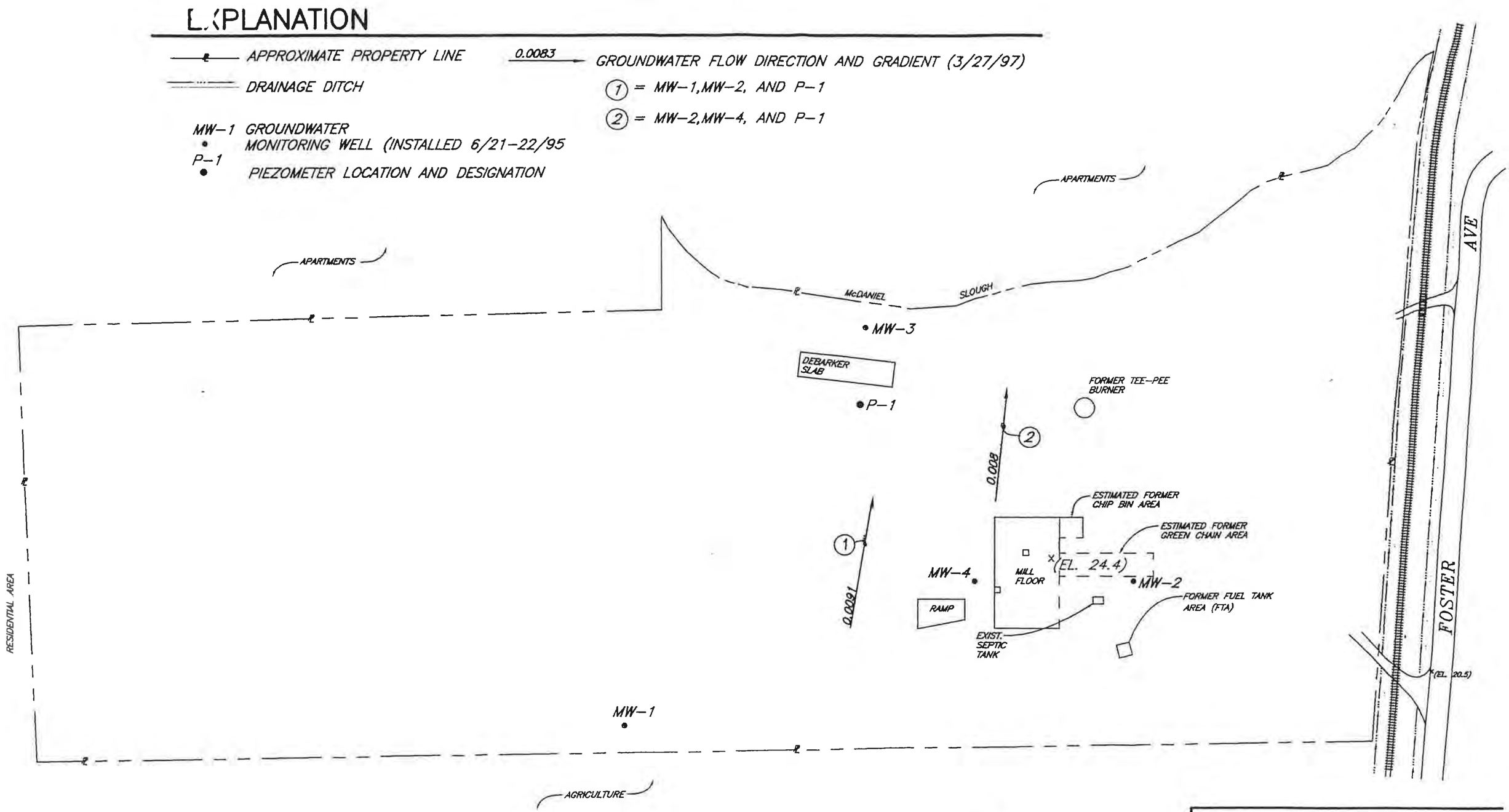
Groundwater samples were collected on May 22, 1997, for all required constituents from wells MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data, including the water quality parameters CO_2, Eh, DO, EC, and pH). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. Table 2 summarizes the first quarter 1997 sample analytical results. See Appendix C for analytical results and chain-of-custody documentation.

TABLE 2

SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Metals[a)] (ug/L)	Tannins & Lignins (mg Tannin/L)
MW-1	5/22/97	<0.50	<50	<50	<500	Ni, Zn	0.36
MW-2	5/22/97	<0.50	<50	100	<500	Ni, Zn	1.3
MW-3	5/22/97	<0.50	<50	<50	<500	Zn	3.6
MW-4	5/22/97	<0.50	<50	63	<500	Ni, Zn	1.3
QC-1/MW-4	5/22/97	<0.50	<50	63	<500	---	---

[a] Chromium (Cr), Lead (Pb), Nickel (Ni), Zinc (Zn)--see individual lab reports
QC-1 = Quality Control Sample
--- = not sampled



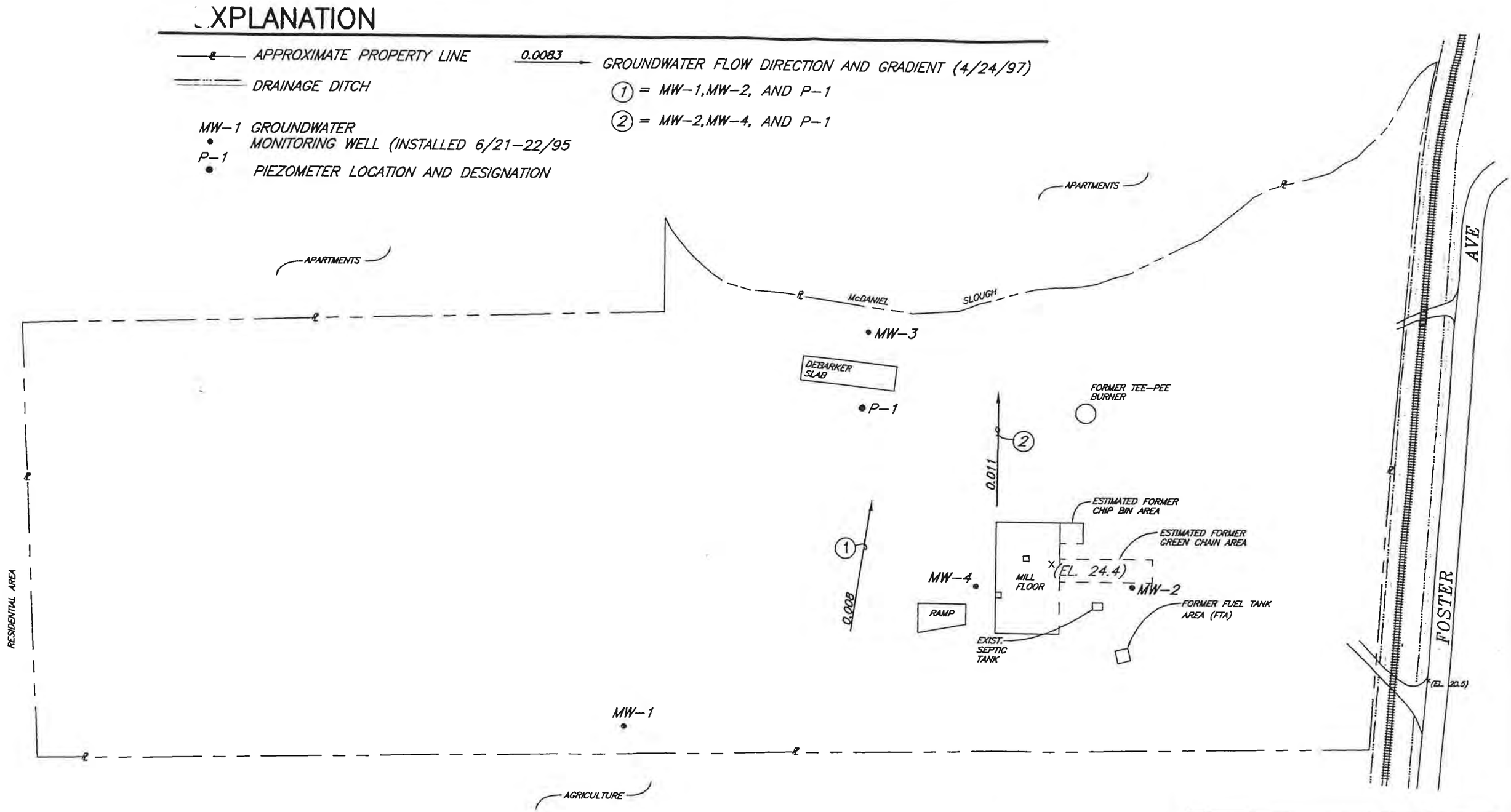
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
JUNE, 1997

FIGURE **2**

930121P7



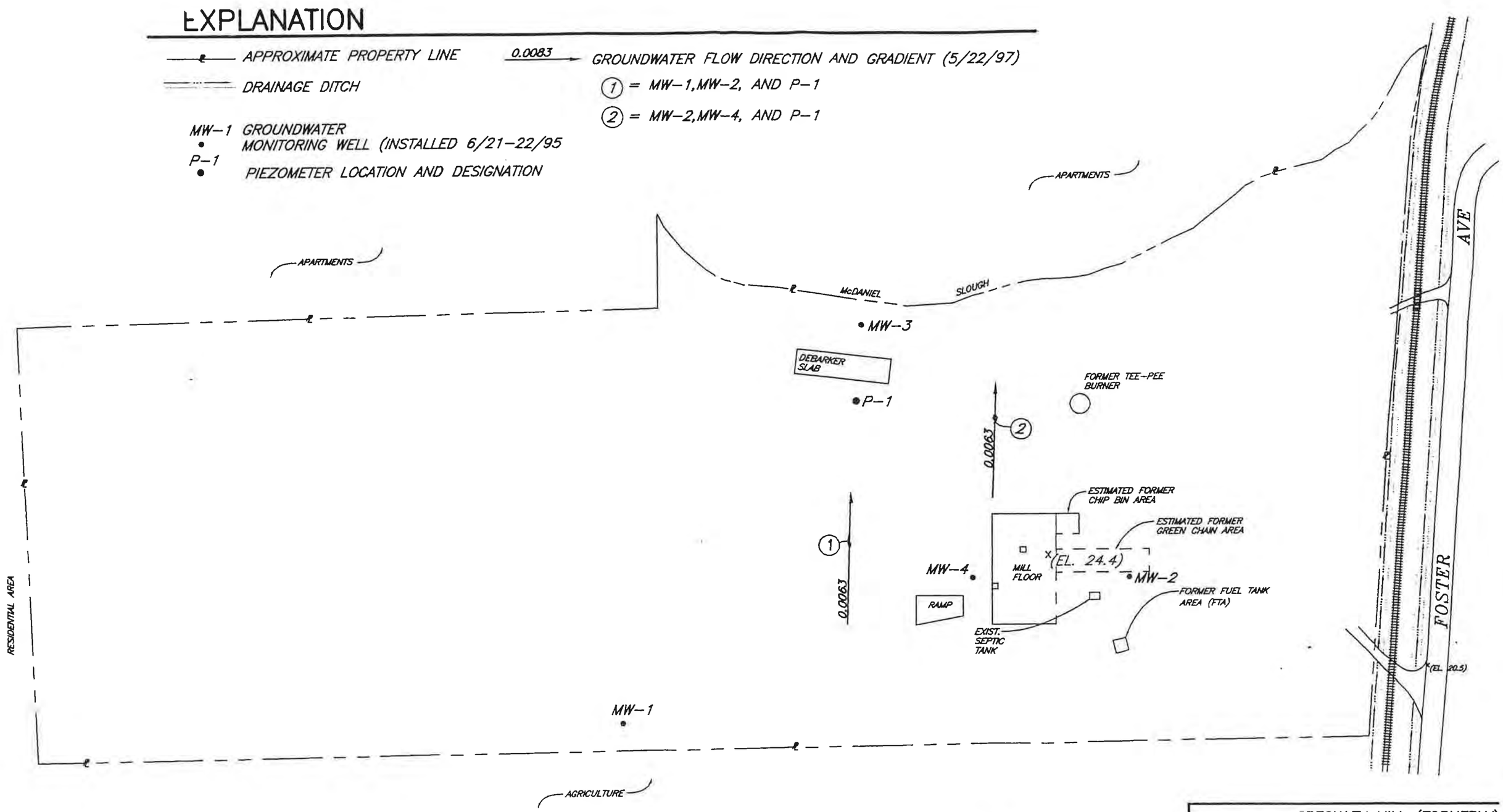
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
JUNE, 1997

FIGURE **3**

93.121.1



930121P3

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
JUNE, 1997

SHN

FIGURE 4

The groundwater flow direction during May maintained the "downgradient" direction from source site well positions. Excepting for detectable diesel in MW-2 (100 ug/L) and MW-4 (63 ug/L), groundwater analytical results indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) were below the method reporting limits. Dissolved metals of concern are all below California drinking water standards (Maximum Contaminant Levels). Tannins and Lignins were detected, at low levels, in all wells.

Geotechnical parameters collected during the May 1997 groundwater monitoring event are summarized in Table 3. DO concentrations detected in site wells are sufficient to support biodegradation at the site. DCO_2 concentrations detected in site wells are high enough to indicate that biodegradation may be occurring at the site. Eh measurements collected from site wells indicate an aerobic environment is present in the subsurface at the site.

TABLE 3
GEOTECHNICAL PARAMETER MEASUREMENT

WELL#	Date	DO	DCO_2	Eh
MW-1	5/22/97	9.6	80	200
MW-2	5/22/97	6.3	110	105
MW-3	5/22/97	7.4	200	110
MW-4	5/22/97	6.7	100	90

To ensure the integrity of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected during this monitoring event. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-4), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses.

Quarterly monitoring and reporting will continue, for these existing monitoring wells and piezometer P-1, including geotechnical parameter measurement. Monthly water level measurements in all monitoring wells and P-1 will be continued, as requested by the HCDEH.

SHN again proposes that the quarterly analyses for Tannins and Lignins be dropped from the required analytical suite due to the consistently low documented levels of these constituents, and as technically discussed in the First Quarter report. SHN will sample Janes Creek one time and

analyze the water for pH and Tannins and Lignins for a reference of surface water quality and to check potential differences between groundwater and surface water at the site. As surface water pH and Tannins and Lignins will vary considerably with stream conditions, the comparison is only for gross information.

The metals analyses performed in the Second Quarter 1997 monitoring event, as in previous quarters, indicated dissolved metals concentrations below the MCL. SHN again proposes deletion of the metals constituents from the required quarterly sampling analytical suite, with only one annual dissolved metals sampling to be conducted during the Fall (low groundwater period) sampling event, as discussed in the First Quarter 1997 report.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
5-31-98
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:lms
Attachments (A, B,& C, plus 4 figures)
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

ATTACHMENT A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

ATTACHMENT B

FIELD DATA

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.10U

PAGE 1 of 2

PROJECT NAME: ERS	CLIENT/OWNER: Eel River Sawmills Inc.	DAILY FIELD REPORT SEQUENCE NO: 1	
GENERAL LOCATION OF WORK: Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE	DATE: 3-27-97	DAY OF WEEK: Thursday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER: Marty Lay	
TYPE OF WORK: Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER: Semi-clear	TECHNICIAN: David R. Laine	
	KEY PERSONS CONTACTED (Cmty Engr, Architect, Developer, etc)		
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING			

Arrived on site at 1010. Then I took water levels de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.
Left site at 1045.

Mileage: 20 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 512 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Laine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

JOB NO. :93012J.10
CLIENT: Eel River Sawmills
LOCATION: Foster Av. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	1/27/97 DRP	26.69	2.41	24.28
mw-2		26.04	3.13	22.91
mw-3		24.445	7.09	17.355
mw-4		27.72	3.80	23.92
P-1		28.57	4.00	24.57
mw-1	2/28/97 DRP	26.69	2.64	24.05
mw-2		26.04	3.77	22.27
mw-3		24.445	8.82	15.625
mw-4		27.72	4.96	22.76
P-1		28.57	7.25	21.32
mw-1	3/27/97 DRP	26.69	3.87	22.82
mw-2		26.04	5.38	20.66
mw-3		24.445	9.73	14.715
mw-4		27.72	6.91	20.81
P-1		28.57	9.19	19.38

APPENDIX K

DAILY FIELD REPORT

JOB NO 930121.100
PAGE 1 of 2

PROJECT NAME: Eel River Sawmill	CLIENT/OWNER: ERS	DAILY FIELD REPORT SEQUENCE NO: 1
GENERAL LOCATION OF WORK: Foster Ave. Arcata	OWNER/CLIENT REPRESENTATIVE: Rick Steed	DATE: 4-24-97 / DAY OF WEEK: Thursday
GENERAL CONTRACTOR: n/a	GRADING CONTRACTOR: n/a	PROJECT ENGINEER: Marty Kay
TYPE OF WORK: Water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN: n/a	SUPERVISOR: —
SOURCE & DESCRIPTION OF FILL MATERIAL: n/a	WEATHER: Clear	TECHNICIAN: Curtis Coburn
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, ect)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

I arrive on-site @ 0830.

I open (in order) MW-1, P-1, MW-3, MW-2 & MW-4. No wells appear to have a pressure different from ambient atmosphere. I take all water levels (in above order) & secure the stand pipes as I go. I thoroughly clean the sounder tip w/ Liquinox & DI before starting & after each measurement. The ground on-site is generally quite firm on the southern end. Portions of the middle of the site are some what softer, w/ large areas of standing water to nearly 1 ft. deep. I very nearly got my 4WD truck stuck.

I leave site @ 0924.

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: C Coburn

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

APPENDIX K

JOB NO. : 930121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Av. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	1/27/97 DRP	26.69	2.41	24.28
MW-2		26.04	3.13	22.91
MW-3		24.445	7.09	17.355
MW-4		27.72	3.80	23.92
P-1		28.57	4.00	24.57
MW-1	2/28/97 DRP	26.69	2.64	24.05
MW-2		26.04	3.77	22.27
MW-3		24.445	8.82	15.625
MW-4		27.72	4.96	22.76
P-1		28.57	7.25	21.32
MW-1	3/27/97 DRP	26.69	3.87	22.82
MW-2		26.04	5.38	20.66
MW-3		24.445	9.73	14.715
MW-4		27.72	6.91	20.81
P-1		28.57	9.19	19.38
MW-1	4-24-97 0855	2669	3.39	23.30
MW-2	0906	26.04	4.04	22.00
MW-3	0902	24.445	10.33	14.115
MW-4	0910	27.72	5.41	22.31
P-1	0858	28.57	8.09	20.48

SHN

APPENDIX K

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 7

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 5-22-97 DAY OF WEEK Thursday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Quarterly Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER overcast with showers to semi-clear	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING		

Arrived on site at 0704. Then I took all water levels in this order mw-1, P-1, mw-3, mw-4 and mw-2 de-coning the sounder after each well by scrubbing it with liquinox then rinsed it with DI water. Then I purged mw-1, mw-3, mw-4 and mw-2 in this order with a 2" TEFLON bailer and the tri-pod and reel. Purge water from all wells was put into 5 gal buckets and stored by full 55 gal. drum located by mw-1. I de-coned the 2" bailer after purging each well by scrubbing it with liquinox then rinsed it with DI water. After 3 casing volumes I took DO and Eh readings by stirring them in a 9oz soil jar, also, I took a CO_2 reading. Then I sampled mw-1, mw-3, mw-4 and mw-2 in this order with disposable bailers and the tri-pod and reel.
QC-1 (TPHD/mo) was taken out of mw-4.
Then I secured all wells with caps and lids.
Left site for NCL at 1315.

Mileage 28 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash EUREKA, CA 95501	COPY GIVEN TO:	PREPARED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

JOB NO. : 930121.1
CLIENT: Eel River Sawmills
LOCATION: Foster Av. Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	1/27/97 DRP	26.69	2.41	24.28
mw-2		26.04	3.13	22.91
mw-3		24.445	7.09	17.355
mw-4		27.72	3.80	23.92
P-1		28.57	4.00	24.57
mw-1	2/28/97 DRP	26.69	2.64	24.05
mw-2		26.04	3.77	22.27
mw-3		24.445	8.82	15.625
mw-4		27.72	4.96	22.76
P-1		28.57	7.25	21.32
mw-1	3/27/97 DRP	26.69	3.87	22.82
mw-2		26.04	5.38	20.66
mw-3		24.445	9.73	14.715
mw-4		27.72	6.91	20.81
P-1		28.57	9.19	19.38
MW-1	4-24-97 0855	2669	3.39	23.30
MW-2	0906	26.04	4.04	22.00
MW-3	0902	24.445	10.33	14.115
MW-4	0910	27.72	5.41	22.31
P-1	0858	28.57	8.09	20.48
mw-1	5/22/97 DRP	26.69	5.97	20.72
mw-2		26.04	6.40	19.64
mw-3		24.445	11.27	13.175
mw-4		27.72	8.05	19.67
P-1		28.57	10.09	18.48

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	5-22-97
CLIENT	Eel River Sawmills	SAMPLER	David R. Lains
WELL NO.	MW-1	ELEVATION	
TOTAL DEPTH	14.78	WATER	
DEPTH		ELEVATION	
TO WATER	5.97		

HT OF WATER COLUMN 8.81 X(0.~~66~~ .16)=CASING VOL 1.41 x 3 = 4.23

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
5.97	0808	0811	1.50 gal.	324	55.5°	6.28
		0816	3 gal.	324	54.5°	6.22
Do / Co_2 / Eh		0821	4.25 gal.	324	54.4°	6.29
9.6 / 80 / 200		0825	4.50 gal.			

TOTAL 4.5 gal.

INITIAL WATER VOLUME 1.4 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1215

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 5.98 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	5-22-97
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-3	ELEVATION	
TOTAL DEPTH	25.90	WATER	
DEPTH		ELEVATION	
TO WATER	11.27		

HT OF WATER COLUMN 14.63 X(0.~~66~~ .16)=CASING VOL 2.34 x 3 = 7.02

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
11.27	0855	0859	2.50 gal.	1207	57.7°	6.72
Empty		0910	5 gal.	1168	57.6°	6.80
Empty	0925	0929	5.75 gal.	1121	57.6°	6.95
Empty	0944	0947	6.25 gal.	1147	58.2°	6.93
Empty	1002	1006	6.75 gal.	1150	56.8°	6.95
DO	CO_2	Eh				
7.4	200	110				

TOTAL 6.8 gal.

INITIAL WATER VOLUME 2.3 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1230

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann + Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 18.63 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 930121.100 DATE 5-22-97

CLIENT Eel River Sawmills SAMPLER David R. Lain

WELL NO. MW-4 ELEVATION

TOTAL DEPTH 14.54 WATER

DEPTH ELEVATION

TO WATER 8.05

HT OF WATER COLUMN 6.49 X(0.16)=CASING VOL 1.04 x 3 = 3.12

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
8.05	1038	1040	1.25 gal.	351	59.3°	6.38
		1044	2.25 gal.	353	58.9°	6.39
DO / CO2 / Eh		1048	3.25 gal.	350	58.5°	6.36
6.7 / 100 / 90		1052	3.50 gal.			

TOTAL 3.5 gal.

INITIAL WATER VOLUME 1.0 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1245

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. & Lign., TPHD/mo

LABORATORY NCL

REMARKS QC-1 TPHD/mo

Recharged to 8.06 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	5-22-97
CLIENT	Eel River Sawmills	SAMPLER	David R. Lain
WELL NO.	MW-2	ELEVATION	
TOTAL DEPTH	12.05	WATER	
DEPTH		ELEVATION	
TO WATER	6.40		

HT OF WATER COLUMN 5.65 X(0.~~66~~ .16)=CASING VOL 0.90 x 3 = 2.71

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
6.40	1113	1115	1 gal.	291	60.8°	6.27
		1119	2 gal.	300	59.7°	6.27
		1123	2.75 gal.	307	59.4°	6.27
DO / CO_2	Eh	1127	3 gal			
6.3 / 110	105					

TOTAL 3.0 gal.

INITIAL WATER VOLUME 0.9 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1300

SAMPLE ANALYSIS TPHG/BTEX, Metals, Tann. + Lign., TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 6.41 at sampling time

E:\FORMS\FIELD.LOG

P. 1 of 1

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: ______

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459A
Fortuna, Ca. 95540
Phone: 725-1911
Copies of Report to: SHN Marty Lay
812 W Wabash Ave.
Eureka, Ca. 95501

PROJECT INFORMATION

Project Number: 093121.100
Project Name: ERS Specialty mill
Purchase Order Number: ______

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day ☒ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	TPH/BTEX/MTBE (Preservative: b; Container: 9)	Diss. metals	Tannins Lignins	TPHD / mo
	mw-1	5/22/97	1215	GW	X	X	X	X
	mw-3	↓	1230	↓	X	X	X	X
	mw-2	↓	1245	↓	X	X	X	X
	mw-4	↓	1300	↓	X	X	X	X
	QC-1	↓	—	↓	●			X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Parin David R. Parin	1321 5/22/97	Jag	5-22-97 1322

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

ATTACHMENT C

ANALYTICAL RESULTS

APPENDIX K

APPENDIX K

NORTH COAST LABORATORIES LTD.

Date: 06/03/97 REPORT

REPORT Eel River Saw Mill
TO 1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 97-05-478

INVOICE # 60059169

Attn: Dennis Scott

WORK ID: 093121.100/Speciality Mill

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
01	MW-1
01	MW-1
02	MW-2
02	MW-2
02	MW-2
02	MW-2
03	MW-3
03	MW-3
03	MW-3
03	MW-3
04	MW-4
04	MW-4
04	MW-4
04	MW-4
05	QC-1
06	Blank
07	Lab. Control Sample

Comments:

Samples 02C, 04C & 05C contain material in the diesel range, but the material does not exhibit the peak pattern typical of diesel oil. A surrogate is not added to the diesel/motor oil samples because the surrogate elutes in the motor oil range.

Notes and Definitions:

Limit = Reporting Limit NQ = Not Quantifiable
ND = None Detected NR = Not Requested

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/28/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Surrogate:						05/28/97	EPA 602
cis-1,2-dichloroethene	92.3	N/A	% Rec	1.0		05/28/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/28/97	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Chromium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Nickel	24	20	ug/L	1.0		05/29/97	EPA 6010A
Zinc	33	20	ug/L	1.0		05/29/97	EPA 6010A
Lead	ND	20	ug/L	4.0		06/02/97	EPA 200.9

SAMPLE ID: MW-1 FRAC.: 01C COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID

SAMPLE ID: MW-1 FRAC.: 01D COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	0.36	0.10	mg Tannin/L	1.0		05/28/97	SM 5550B

SAMPLE ID: MW-2 FRAC.: 02A COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/28/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Surrogate:						05/28/97	EPA 602
cis-1,2-dichloroethene	124	N/A	% Rec	1.0		05/28/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/28/97	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 02B COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Chromium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Nickel	26	20	ug/L	1.0		05/29/97	EPA 6010A
Zinc	82	20	ug/L	1.0		05/29/97	EPA 6010A
Lead	ND	20	ug/L	4.0		06/02/97	EPA 200.9

SAMPLE ID: MW-2 FRAC.: 02C COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	100	50	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 02D COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.3	0.10	mg Tannin/L	1.0		05/28/97	SM 5550B

APPENDIX K

SAMPLE ID: MW-3 FRAC.: 03A COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/28/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Surrogate:						05/28/97	EPA 602
cis-1,2-dichloroethene	100	N/A	% Rec	1.0		05/28/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/28/97	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 03B COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Chromium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Nickel	ND	20	ug/L	1.0		05/29/97	EPA 6010A
Zinc	60	20	ug/L	1.0		05/29/97	EPA 6010A
Lead	ND	20	ug/L	4.0		06/02/97	EPA 200.9

SAMPLE ID: MW-3 FRAC.: 03C COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 03D COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	3.6	0.10	mg Tannin/L	1.0		05/28/97	SM 5550B

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 04A COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/28/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Surrogate:						05/28/97	EPA 602
cis-1,2-dichloroethene	115	N/A	% Rec	1.0		05/28/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		05/28/97	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 04B COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Chromium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Nickel	24	20	ug/L	1.0		05/29/97	EPA 6010A
Zinc	60	20	ug/L	1.0		05/29/97	EPA 6010A
Lead	ND	20	ug/L	4.0		06/02/97	EPA 200.9

SAMPLE ID: MW-4 FRAC.: 04C COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	63	50	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 04D COLLECTED: 05/22/97 RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.3	0.10	mg Tannin/L	1.0		05/28/97	SM 5550B

APPENDIX K

SAMPLE ID: QC-1 FRAC.: 05C COLLECTED: N/A RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	63	50	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		05/28/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		05/28/97	EPA 602
Surrogate:						05/28/97	EPA 602
cis-1,2-dichloroethene	97.1	N/A	% Rec	1.0		05/28/97	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Chromium	ND	10	ug/L	1.0		05/29/97	EPA 6010A
Nickel	ND	20	ug/L	1.0		05/29/97	EPA 6010A
Zinc	ND	20	ug/L	1.0		05/29/97	EPA 6010A
Lead	ND	20	ug/L	4.0		06/02/97	EPA 200.9
TPHC Gasoline/water	ND	50	ug/L	1.0		05/28/97	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	05/28/97	05/30/97	EPA3510GCFID
Tannin and Lignin	ND	0.10	mg Tannin/L	1.0		05/28/97	SM 5550B

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 05/22/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	104	N/A	% Rec	1.0		05/28/97	EPA 602
Benzene	93.0	N/A	% Rec	1.0		05/28/97	EPA 602
Toluene	92.3	N/A	% Rec	1.0		05/28/97	EPA 602
Ethylbenzene	84.1	N/A	% Rec	1.0		05/28/97	EPA 602
m,p Xylene	88.9	N/A	% Rec	1.0		05/28/97	EPA 602

Date: 06/03/97
Work Order: 97-05-478
Invoice #: 60059169

REPORT

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
o Xylene	98.5	N/A	% Rec	1.0		05/28/97	EPA 602
Surrogate:						05/28/97	EPA 602
cis-1,2-dichloroethene	109	N/A	% Rec	1.0		05/28/97	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	93.6	N/A	% Rec	1.0		05/29/97	EPA 6010A
Chromium	103	N/A	% Rec	1.0		05/29/97	EPA 6010A
Nickel	104	N/A	% Rec	1.0		05/29/97	EPA 6010A
Zinc	107	N/A	% Rec	1.0		05/29/97	EPA 6010A
Lead	102	N/A	% Rec	4.0		06/02/97	EPA 200.9
TPHC Gasoline/water	86.3	N/A	% Rec	1.0		05/28/97	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	96.5	N/A	% Rec	1.0	05/28/97	05/30/97	EPA3510GCFID
TPHC - Motor Oil	95.5	N/A	% Rec	1.0	05/28/97	05/30/97	EPA3510GCFID
Tannin and Lignin	102	N/A	% Rec	1.0		05/28/97	SM 5550B

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

P. 1 of 1

Chain of Custody

LABORATORY NUMBER: 9705478

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt. 1 Box 459 A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave
Eureka, Ca 95501

PROJECT INFORMATION

Project Number: 093121.100
Project Name: ERS Specialty mill
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

					TPHG/BTEX/MTBE	Dissolved Metals	Tannins–Lignins	TPHD / mo
PRESERVATIVE					b			
CONTAINER					9			
LAB ID	**SAMPLE ID**	**DATE**	**TIME**	**MATRIX***				
1	mw-1	5/21/97	1215	GW	X	X	X	X
3	mw-3	↓	1230	↓	X	X	X	X
2	mw-2	↓	1245	↓	X	X	X	X
4	mw-4	↓	1300	↓	X	X	X	X
5	QC-1	↓	—	↓	●			X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
[illegible]

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R Paine David R Paine	1321 5/21/97	[signature]	5/22/97 1322

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand (circled)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

697 L > Vol. 3

SHN
CONSULTING ENGINEERS
& GEOLOGISTS

697 L → Vol. 3

John R. Selvage, P.E.
K. Jeff Nelson, P.E.
Roland S. Johnson, Jr., C.E.O.

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(530) 221-5424
FAX (530) 221-0135

Reference: 930121.100

December 30, 1997

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: FOURTH QUARTER 1997 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

This Fourth Quarter 1997 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995, and August 7, 1997 letters to ERS (Attachment A).

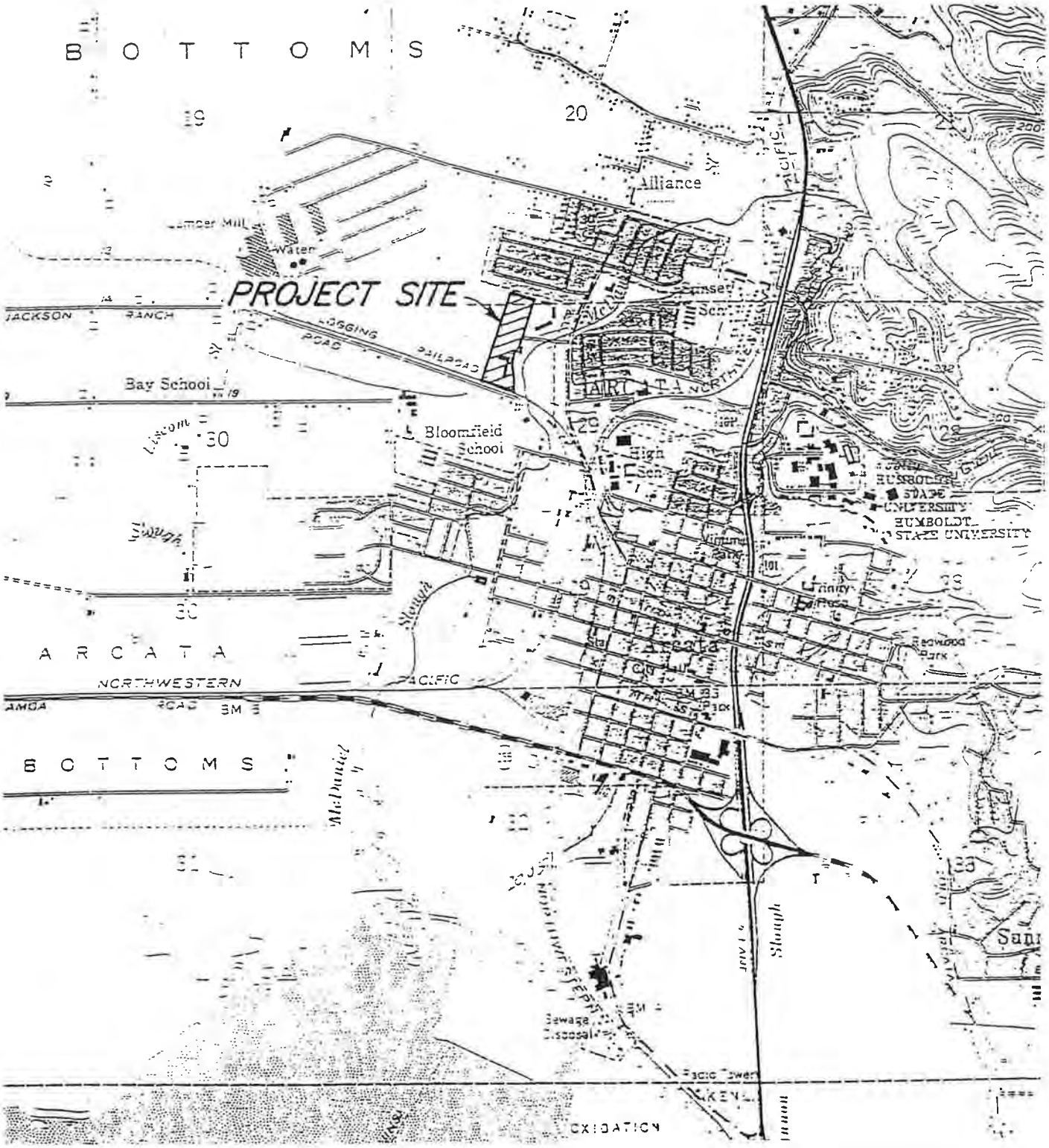
The report summarizes groundwater level and sampling data collected during September, October, and November 1997. Groundwater monitoring well quarterly sampling was conducted in November 1997, for the modified sampling program (HCDEH letter dated August 7, 1997) deleting dissolved metals, and Tannins and Lignins. Field notes and certified laboratory analytical reports follow in Attachments B and C, respectively. As requested by HCDEH (Item 1, letter November 13, 1997, Attachment A), the historical monitoring well groundwater levels and analytical data summary tables are presented in Attachment D.

Site work conducted this quarter, in addition to regularly scheduled monitoring, included the removal of approximately 400 cubic yards of contaminated, temporarily stockpiled, soil from the former vehicle maintenance and the former fuel tank areas overexcavation project (July 1997), to a designated winterization stockpile area located at ERS Mill A, in Fortuna.

Table 1 (on the following page) is a summary of the groundwater elevations measured at monitoring wells MW-1, MW-2, MW-3, MW-4, and piezometer P-1 during this reporting period.

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Using the data collected, SHN calculated groundwater flow direction and gradient for the months of September, October, and November 1997. Data collected indicates that site groundwater levels measured in September and October 1997 are lower than last quarter levels, and are generally lower or near the same elevation this

APPENDIX K



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

FIGURE 1

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	9/24/97	13.09	13.60
MW-2	9/24/97	8.61	17.43
MW-3	9/24/97	15.75	8.695
MW-4	9/24/97	10.24	17.48
P-1	9/24/97	12.71	15.86
MW-1	10/22/97	13.93	12.76
MW-2	10/22/97	8.84	17.20
MW-3	10/22/97	15.72	8.725
MW-4	10/22/97	10.54	17.18
P-1	10/22/97	13.21	15.36
MW-1	11/25/97	8.48	18.21
MW-2	11/25/97	4.88	21.16
MW-3	11/25/97	14.53	9.915
MW-4	11/25/97	6.90	20.82
P-1	11/25/97	10.01	18.56

year relative to the corresponding time last year. Site water levels rose significantly in November 1997. The pattern of shifting groundwater direction is very similar to the corresponding time last year. The groundwater flow direction and gradient for the months of September, October, and November ,are represented by two monitoring well cluster configurations (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figures 2, 3, and 4, respectively. Well cluster MW-1, MW-2, P-1 is representative of the groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area. The calculated groundwater flow direction between last quarter (August) and this quarter (three months) indicates the previously documented seasonal shift in flow direction from the southeast toward the east and north-northeast (well cluster dependent).

EXPLANATION

℄ APPROXIMATE PROPERTY LINE

DRAINAGE DITCH

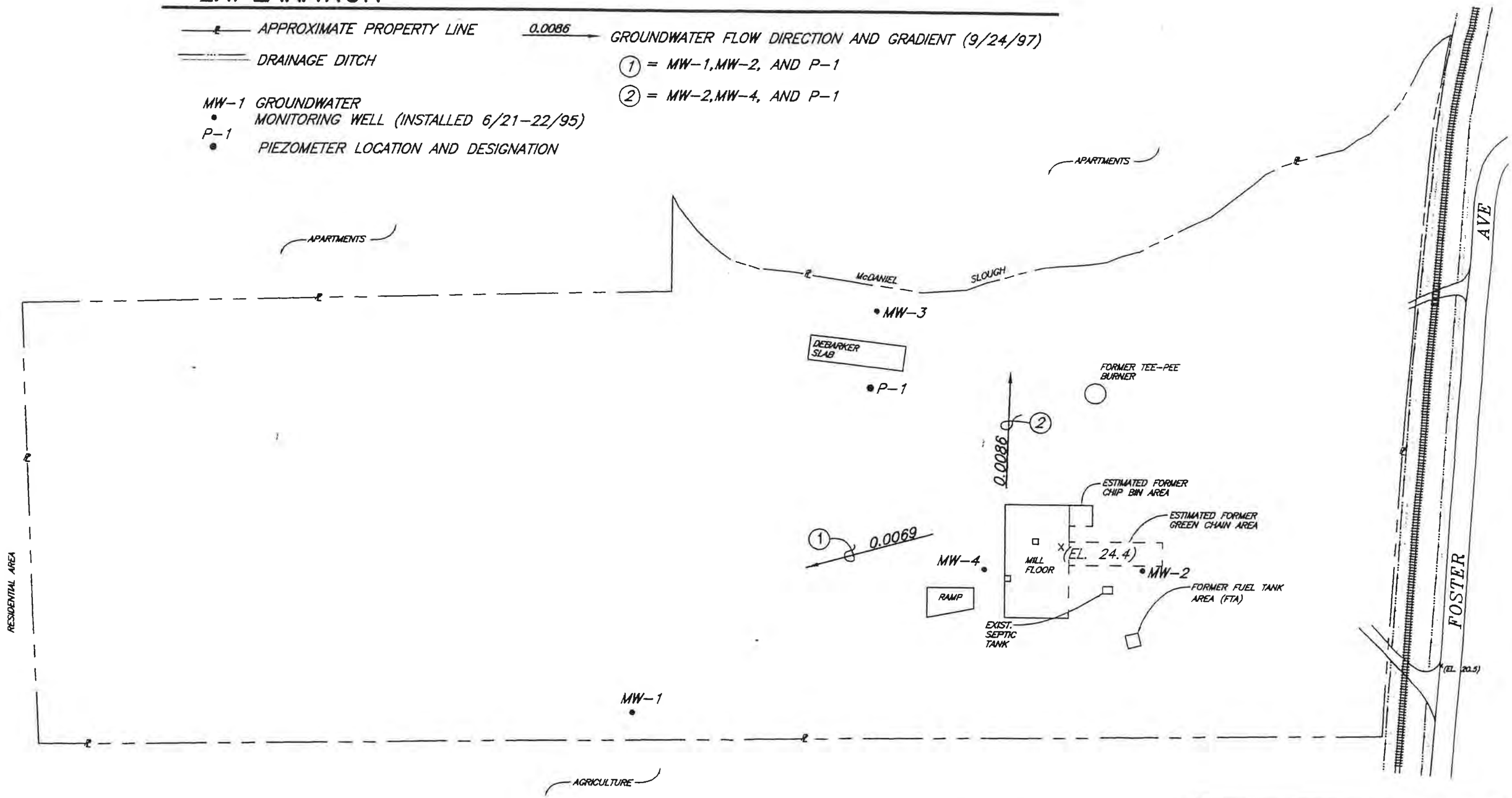
MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)

P-1 PIEZOMETER LOCATION AND DESIGNATION

0.0086 GROUNDWATER FLOW DIRECTION AND GRADIENT (9/24/97)

(1) = MW-1, MW-2, AND P-1

(2) = MW-2, MW-4, AND P-1



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY
ARCATA, CALIFORNIA
APN #505-161-1

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.10C
DECEMBER, 199?

FIGURE ?

SHN

930121D2

EXPLANATION

APPROXIMATE PROPERTY LINE

DRAINAGE DITCH

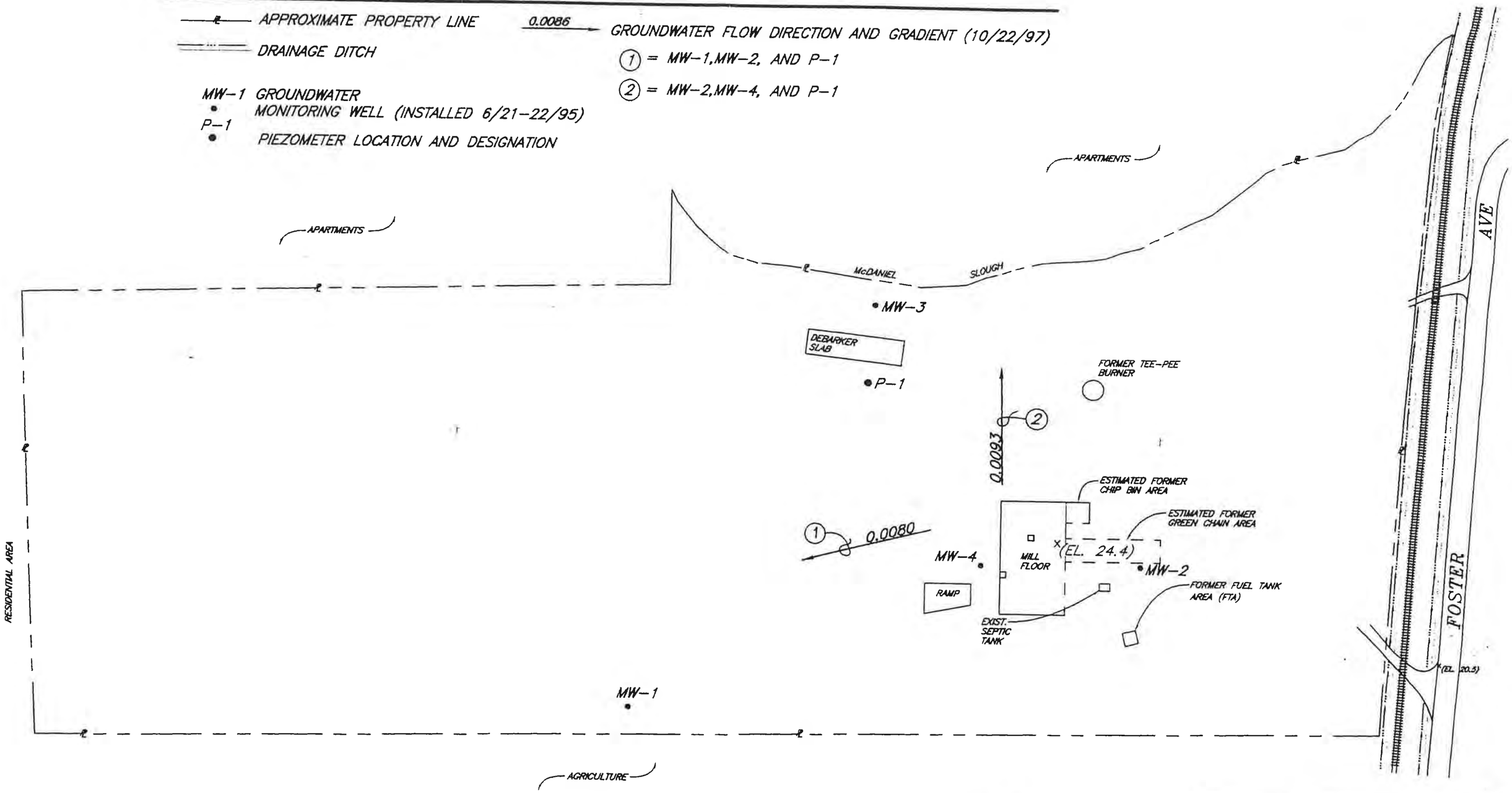
MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)

P-1 PIEZOMETER LOCATION AND DESIGNATION

0.0086 GROUNDWATER FLOW DIRECTION AND GRADIENT (10/22/97)

(1) = MW-1, MW-2, AND P-1

(2) = MW-2, MW-4, AND P-1



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

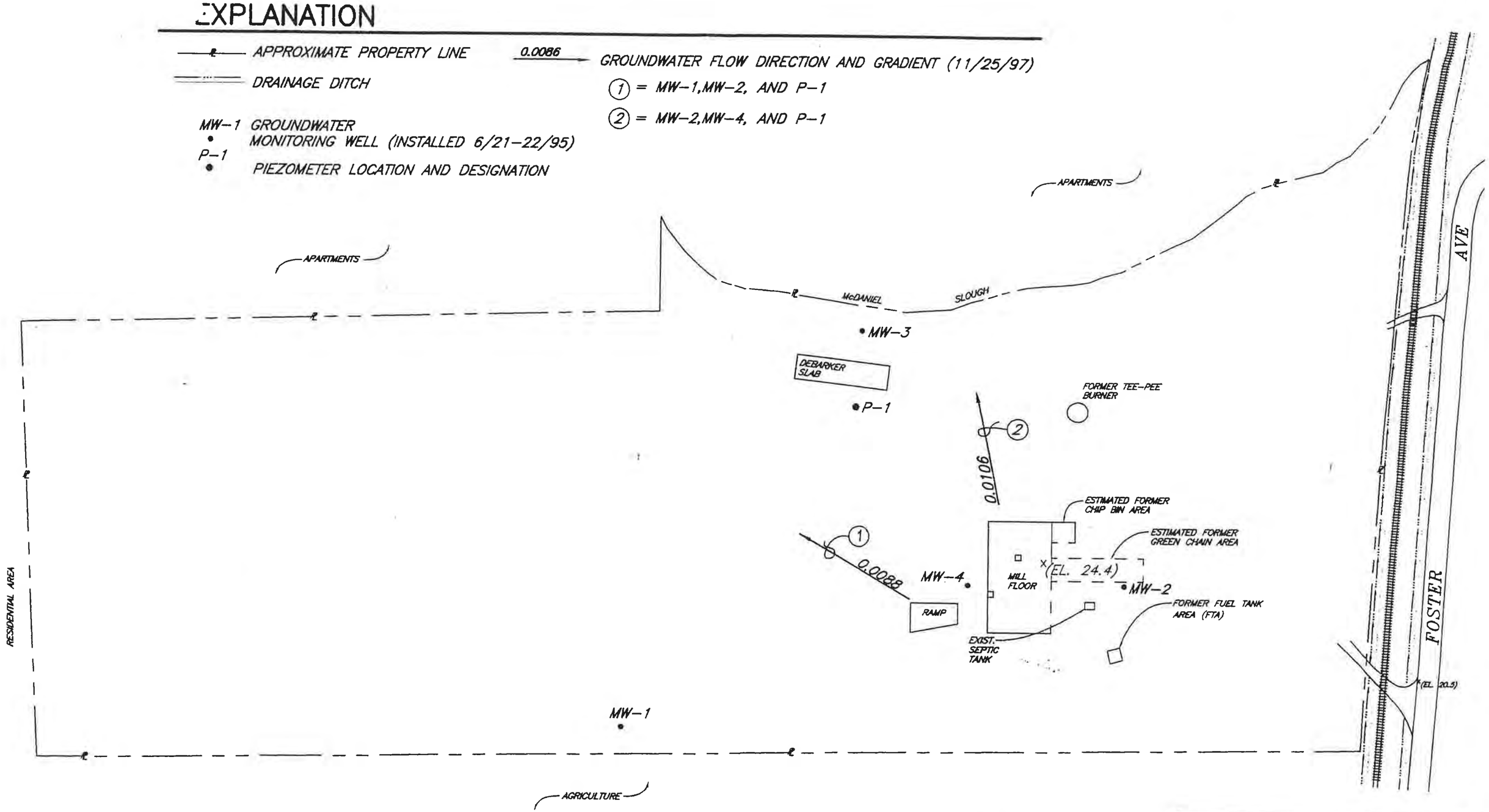
SPECIALTY MILL (FORMERLY
ARCATA, CALIFORNIA
APN #505-161-1

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.10C
DECEMBER, 1997

SHN

930121U3


EXPLANATION
APPROXIMATE PROPERTY LINE
DRAINAGE DITCH
MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)
P-1 PIEZOMETER LOCATION AND DESIGNATION
0.0086 GROUNDWATER FLOW DIRECTION AND GRADIENT (11/25/97)
(1) = MW-1,MW-2, AND P-1
(2) = MW-2,MW-4, AND P-1
APARTMENTS
APARTMENTS
McDANIEL SLOUGH
MW-3
DEBARKER SLAB
P-1
FORMER TEE-PEE BURNER
0.0106
ESTIMATED FORMER CHIP BIN AREA
ESTIMATED FORMER GREEN CHAIN AREA
MILL FLOOR
(EL. 24.4)
MW-2
FORMER FUEL TANK AREA (FTA)
0.0088
MW-4
RAMP
EXIST. SEPTIC TANK
AVE
FOSTER
(EL. 20.5)
RESIDENTIAL AREA
MW-1
AGRICULTURE
0 50 100 Feet
SCALE: 1" = 100'
ALL LOCATIONS ARE APPROXIMATE
SPECIALTY MILL (FORMERLY
ARCATA, CALIFORNI
APN #505-161-1
GROUNDWATER FLOW DIRECTION
AND GRADIENT
SHN 930121.10
DECEMBER, 199
SHN
FIGURE 4

930121D4

Groundwater samples were collected on November 25, 1997, for all required constituents from wells MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data, including the water quality parameters carbon dioxide [CO_2], oxidation/reduction potential [Eh], dissolved oxygen [DO], electrical conductivity [EC], and pH). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. Table 2 summarizes the fourth quarter 1997 sample analytical results. See Attachment C for analytical results and chain-of-custody documentation.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)
MW-1	11/25/97	<0.50	<50	<50	<500
MW-2	11/25/97	<0.50	<50	140	<500
MW-3	11/25/97	<0.50	<50	<50	<500
MW-4	11/25/97	<0.50	<50	94	<500
QC-1/MW-2	11/25/97	<0.50	<50	---	---

QC-1 = Quality Control Sample
--- = not sampled

Groundwater flow in the mill/debarker slab area was toward the east, during this quarter. Groundwater analytical results from wells MW-1 and MW-3 indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) were below the method reporting limits. MW-2 and MW-4 groundwater samples contained detectable petroleum hydrocarbon as diesel. Geochemical parameters collected during the November 1997 groundwater monitoring event are summarized in Table 3.

TABLE 3
GEOCHEMICAL PARAMETER MEASUREMENT

WELL#	Date	DO	DCO_2	Eh
MW-1	11/25/97	19.02[1]	55	29
MW-2	11/25/97	8.1	90	98
MW-3	11/25/97	9.05	165	-27
MW-4	11/25/97	8.47	110	48

[1]DO value not realistic, disregard

SHN CONSULTING ENGINEERS & GEOLOGISTS

DO concentrations detected in site wells are sufficient to support biodegradation at the site. DO concentration are lower in on-site wells than in upgradient well MW-1. The DO concentration measured in well MW-1 was significantly higher than would be expected, and therefore, was not used. DCO_2 concentrations detected in site wells, except MW-1, are high enough to indicate that biodegradation is occurring at the site. Eh measurements collected from site wells, except MW-3, indicate an aerobic environment is present in the subsurface at the site. Eh at MW-3 indicates that biological activity is occurring and that anaerobic conditions are prevailing.

To ensure the integrity of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected during this monitoring event. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-2), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses for the constituents analyzed.

Quarterly monitoring and reporting will continue, for the existing monitoring wells and piezometer P-1, including geotechnical parameter measurement. Monthly water level measurements in all monitoring wells and P-1 will be continued, as requested by the HCDEH. required analytical suite.

SHN did not sample Janes Creek, in November, for pH, and Tannins and Lignins. This sampling will be conducted during the next monitoring well sampling event, pending groundwater recharge and flow direction changes, for a reference of surface water quality and to check potential differences between groundwater and surface water at the site. As surface water pH and Tannins and Lignins will vary considerably with stream conditions, the comparison is only for gross information.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
3-31-98
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:lms
Attachments (A, B, C & D, plus 4 figures)
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

G:1993\930121\4TH.OTR.97

ATTACHMENT A

CORRESPONDENCE

APPENDIX K

REC'D NOV 18 1997

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

100 H STREET, SUITE 100, EUREKA, CA 95501

(707) 445-6215

FAX (707) 441-5699

13 November 1997

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the quarterly monitoring report and report of findings for the recent overexcavation prepared by SHN Consulting Engineers and Geologists (SHN). We have reviewed the reports and have the following comments:

1. All future monitoring reports are to include a complete table of both current and historical monitoring data.

2. Please provide revised tables of sampling data for the overexcavation including individual sample depths.

3. We concur with the recommendation for continued groundwater monitoring at the site. When the proposed monitoring program is complete, we will evaluate the need for further investigation and remediation as may be necessary.

4. We have not received a response to our request for information regarding encapsulation of the approximately 350 yards of material recently moved to the Mill A site.

5. A contingency and remedial plan need to be developed for investigation and handling of potentially contaminated soil and/or groundwater that may be encountered during site redevelopment.

Please submit the requested information by 31 December 1997. I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit
DD/ljb

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata

12518.008/697L

APPENDIX K

REC'D AUG 11 1997

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

100 H STREET, SUITE 100, EUREKA, CA 95501

(707) 445-6215
FAX (707) 441-5699

7 August 1997

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the quarterly monitoring reports and the 12 June 1997 letter prepared by SHN Consulting Engineers and Geologists (SHN). We have the following comments.

- Analysis for dissolved metals, tannins and lignins may be deleted from the analytical suite.
- Please provide the methodology used to collect dissolved oxygen measurements.
- The laboratory has noted that the water samples containing material in the diesel range of molecular weights does not match the typical peak pattern for diesel fuel. Please submit copies of the chromatograms for review. Considering the site history as a wood mill, it is possible that the material reported as diesel may be biogenic in origin. We recommend that an alumina or silica gel cleanup be performed on all future samples to eliminate biogenic interference. This method should also be applied to soil samples from the biotreatment cells at the Metropolitan Mill.
- A contingency and remedial plan need to be developed for investigation and handling of potentially contaminated soil that may be encountered during site redevelopment.

Please submit the requested information by 30 September 1997. I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

DRD:fd
cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.005/697L

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

ATTACHMENT B

FIELD DATA

APPENDIX K

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 1

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 11-25-97 / DAY OF WEEK Tuesday
GENERAL CONTRACTOR n/a	GRADING CONTRACTOR n/a	PROJECT ENGINEER Marty Lay
TYPE OF WORK Water Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN n/a	SUPERVISOR Curtis Cobb
SOURCE & DESCRIPTION OF FILL MATERIAL n/a	WEATHER Cloudy	TECHNICIAN David R. Boone
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING		

Arrived on site at 0703. I open all wells & P-1. None appeared to be under pressure or vaccum. I get my paperwork going. I take all water levels (See attached sheet). I thoroughly clean sounder tip w/ liquinox & DI between each measurement, & before starting. I purge MW-1. I change tips & "goof" w/ the DO meter awhile, as I suspect the reading is too high. I sample & secure MW-1. I purge MW-3. I take intrinsic Bio of MW-3. I recalibrate DO meter, which shows over 225% of saturation! I thoroughly clean teflon bailer w/ liquinox & DI (as I do between each well). I purge & sample MW-4 & MW-2. I secure both wells. I put all purge water in 55 gallon drum on-site & secure. I sample MW-3, & secure it. I finish up my paperwork. I leave site for NCh @ 1330.

Mileage: 26 miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	RECEIVED BY: Cobuen

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

APPENDIX K

GROUND WATER ELEVATIONS

JOB NO. : 093121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave, Arcata CA

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1 (3"+/-)	11-25-97	26.69	8.48	18.21
MW-2 (5"+/-)		26.04	4.88	21.16
MW-3 (2"+/-)		24.44	14.53	9.915
MW-4 (4"+/-)		27.72	6.90	20.82
P-1 (1"+/-)	↓	28.57	10.01	18.56

CE Coburn

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-25-97
CLIENT	Eel River Sawmills	SAMPLER	~~David R. Lain~~ Coburn
WELL NO.	MW-1	ELEVATION	
TOTAL DEPTH	14.78	WATER	
DEPTH		ELEVATION	
TO WATER	8.46		

HT OF WATER COLUMN 6.32 X(0.~~66~~ .16)=CASING VOL 1.01 (X3 = 3.03

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
8.46	0807	0810	1.0	331	52.5	5.93
		0815	2.0	336	53.0	5.83
		0820	3.25	333	52.5	6.06
		0824	3.50	333	52.9	6.08
		0827	3.75	332	52.8	6.10
DO	ORP	CO_2				
19.02	29	55~~%~~ @3.75g				
→ too high?		=> note % Sat > 225% before				
		measuring next well!				
		∞ disregard this value!				

TOTAL 3.75

INITIAL WATER VOLUME 1.01

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 0910

SAMPLE ANALYSIS TPHG/BTEX, ~~Metals, Tann. + Lign.~~, TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 8.44 at sampling time

APPENDIX K
FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-25-97
CLIENT	Eel River Sawmills	SAMPLER	~~David A. Rain~~ Cobum
WELL NO.	MW-3	ELEVATION	
TOTAL DEPTH	25.90	WATER	
DEPTH		ELEVATION	
TO WATER	14.53		

HT OF WATER COLUMN 11.37 X(0.~~66~~ .16)=CASING VOL 1.82 (X3=5.46)

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
14.53	0927	0932	2.0	961	53.4	6.72
dry		0938	3.5	976	54.3	6.78
		0953	≈4.25	9.63	55.1	6.77
DO	ORP	CO_2 @4.25g				
9.05	-27	165 mg/l				

TOTAL 4.25

INITIAL WATER VOLUME 1.82

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1310

SAMPLE ANALYSIS TPHG/BTEX, ~~Metals, Tom. Dup.~~, TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 18.01 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-25-97
CLIENT	Eel River Sawmills	SAMPLER	~~David R. Laiam~~ Coburn
WELL NO.	MW-4	ELEVATION	
TOTAL DEPTH	14.54	WATER	
DEPTH		ELEVATION	
TO WATER	6.87		

HT OF WATER COLUMN 7.67 X(0.~~66~~ .16)=CASING VOL 1.23 (X 3) = 3.68

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
6.87	1034	1038	1.25	415	57.9	6.25
		1043	2.50	424	58.7	6.21
		1047	3.75	418	59.2	6.17
DO	ORP	CO_2	@3.75			
8.47	48	110 mg/L	-->			
check % Sat = 097 before measure & recalibrate to 100%.						

TOTAL 3.75

INITIAL WATER VOLUME 1.23

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel

SAMPLE TIME 1120

SAMPLE ANALYSIS TPHG/BTEX, ~~Metals, Trans. Hgn.~~, TPHD/MO

LABORATORY NCL

REMARKS

Recharged to 6.88 at sampling time

E:\FORMS\FIELD.LOG

APPENDIX K

FIELD SAMPLING LOG

PROJECT #	930121.100	DATE	11-25-97
CLIENT	Eel River Sawmills	SAMPLER	~~David R. Lain~~ Coburn
WELL NO.	MW-2	ELEVATION	
TOTAL DEPTH	12.05	WATER	
DEPTH		ELEVATION	
TO WATER	4.82		

HT OF WATER COLUMN 7.23 X(0.~~66~~ .16)=CASING VOL 1.16 (x3 = 3.47)

DEPTH	TIME	TIME	WATER REMOVED	EC	TEMP	pH
4.82	1133	~~1138~~	1.50	441	58.6	6.00
		1143	2.50	423	59.0	5.99
		1146	3.50	390	59.0	6.00
		1149	3.75	376	59.2	5.97
		1152	4.00	398	59.0	5.99
DO	ORP	CO_2 @ 4.00g				
2.81	98	90 mg/L				
↳ % Sat = 88% before measure.						
Recalibrate to 100%.						

TOTAL 4.00

INITIAL WATER VOLUME 1.16

SAMPLING EQUIPMENT Disposable Bailer + Tri-pid and reel

SAMPLE TIME 1225

SAMPLE ANALYSIS TPHG/BTEX, ~~Metals, Fluor. + Lead~~, TPHD/MO

LABORATORY NCL

REMARKS Took QC-1 from here!
Recharged to 4.86 at sampling time

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt 1 Box 459A
Fortuna, CA 95540
Phone: 725-6911
Copies of Report to: SHN Marty Kay
812 W Wabash Ave
Eureka, CA 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 093121.100
Project Name: ERS Specialty Mill
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/MO	ANALYSIS: TPHG/BTEX
	MW-1	11-25-97	0910	GW	a	5	X	X
	MW-3		1310				X	X
	MW-4		1120				X	X
	MW-2		1225				X	X
	QC-1		—				XDX	

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

Called NCL @ 1505 (Jay) & corrected this. He said he would make chng & note per Curtis

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Colvin Curtis Colvin	11/25/97 1550		11/25/97 1550

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

APPENDIX K

DAILY FIELD REPORT

JOB NO 09321.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 10-22-97 / DAY OF WEEK Wednesday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Semi-clear	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, ect)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 1426. Then I took all water levels in this order mw-1, p-1, mw-3, mw-4 and mw-2 de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.
Left site at 1503.

Mileage miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

APPENDIX K

JOB NO. : 0931.1.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave, Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	6/30/97 DRP	26.69	8.26	18.43
mw-2		26.04	7.48	18.56
mw-3		24.445	13.12	11.325
mw-4		27.72	9.11	18.61
P-1		28.57	11.26	17.31
mw-1	7/28/97 DRP	26.69	9.77	16.92
mw-2		26.04	8.48	17.56
mw-3		24.445	15.23	9.215
mw-4		27.72	9.85	17.87
P-1		28.57	11.98	16.59
mw-1	8/26/97 DRP	26.69	11.43	15.26
mw-2		26.04	8.88	17.16
mw-3		24.445	16.33	8.115
mw-4		27.72	10.37	17.35
P-1		28.57	13.56	15.01
mw-1	9/24/97 DRP	26.69	13.09	13.60
mw-2		26.04	8.61	17.43
mw-3		24.445	15.75	8.695
mw-4		27.72	10.24	17.48
P-1		28.57	12.71	15.86
mw-1	10/22/97 DRP	26.69	13.93	12.76
mw-2		26.04	8.84	17.20
mw-3		24.445	15.72	8.725
mw-4		27.72	10.54	17.18
P-1		28.57	13.21	15.36

APPENDIX K

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 9-24-97 DAY OF WEEK Wednesday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Foggy overcast	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr., Architect, Developer, etc)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0920. Then I went around and took water levels in this order MW-1, P-1 MW-3, MW-4 and MW-2 de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Left site at 1010.

Mileage miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

GROUNDWATER ELEVATIONS

JOB NO. : 09312
CLIENT: Eel River Sawmills
LOCATION: Foster Ave, Arcata, Ca.

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
mw-1	6/30/97 DRP	26.69	8.26	18.43
mw-2		26.04	7.48	18.56
mw-3		24.445	13.12	11.325
mw-4		27.72	9.11	18.61
P-1		28.57	11.26	17.31
mw-1	7/28/97 DRP	26.69	9.77	16.92
mw-2		26.04	8.48	17.56
mw-3		24.445	15.23	9.215
mw-4		27.72	9.85	17.87
P-1		28.57	11.98	16.59
mw-1	8/26/97 DRP	26.69	11.43	15.26
mw-2		26.04	8.88	17.16
mw-3		24.445	16.33	8.115
mw-4		27.72	10.37	17.35
P-1		28.57	13.56	15.01
mw-1	9/24/97 DRP	26.69	13.09	13.60
mw-2		26.04	8.61	17.43
mw-3		24.445	15.75	8.695
mw-4		27.72	10.24	17.48
P-1		28.57	12.71	15.86

ATTACHMENT C

ANALYTICAL RESULTS

P. 1 of 1

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9711553

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills
Address: Rt 1 Box 454A
Fortuna, CA 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W Wabash Ave
Eureka, CA 95501

PROJECT INFORMATION

Project Number: 093121.100
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	TPH D/MO	TPH G/BTEX
				PRESERVATIVE		b
				CONTAINER	5	5
1	MW-1	11-25-97	0910	GW	X	X
2	MW-3	↓	1310	↓	X	X
3	MW-4	↓	1120	↓	X	X
4	MW-2	↓	1225	↓	X	X
5	QC-1	↓	—	↓		X

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

per Curtis Coburn 11/25/97 I
3 VOA 1 TB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Coburn Curtis Coburn	11/25/97 1350	[signature]	11/25/97 1350

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

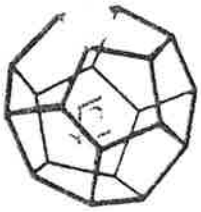
CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

REC'D DEC 12 1997



NORTH COAST LABORATORIES LTD

Date: 12/08/97 REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 97-11-553

INVOICE # 60062871

Attn: Dennis Scott

WORK ID: 093121.100/Speciallty Mill

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
02	MW-3
02	MW-3
03	MW-4
03	MW-4
04	MW-2
04	MW-2
05	QC-1
06	Method Blank
07	Lab. Control Sample
08	Travel Blank

Comments:

Samples 03A & 04A contain material in the diesel range, but the material does not exhibit the peak pattern typical of diesel oil. A surrogate is not added to the diesel/motor oil samples because the surrogate elutes in the motor oil range.

Duplicate of report of 12/05/97.

Notes and Definitions:

Limit = Reporting Limit NQ = Not Quantifiable
ND = None Detected NR = Not Requested

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/01/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Surrogate:						12/01/97	EPA 602
cis-1,2-dichloroethene	89.0	N/A	% Rec	1.0		12/01/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/01/97	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/01/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Surrogate:						12/01/97	EPA 602

APPENDIX K

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
cis-1,2-dichloroethene	88.1	N/A	% Rec	1.0		12/01/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		12/01/97	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 03A COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	94	50	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 03B COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		12/01/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		12/01/97	EPA 602
Surrogate:						12/01/97	EPA 602
cis-1,2-dichloroethene	87.2	N/A	% Rec	1.0		12/01/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		11/30/97	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 04A COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	140	50	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 04B COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		11/30/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		11/30/97	EPA 602

APPENDIX K

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Ethylbenzene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Surrogate:						11/30/97	EPA 602
cis-1,2-dichloroethene	93.6	N/A	% Rec	1.0		11/30/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		11/30/97	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 11/25/97 RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		11/30/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Surrogate:						11/30/97	EPA 602
cis-1,2-dichloroethene	91.4	N/A	% Rec	1.0		11/30/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		11/30/97	EPA5030GCFID

SAMPLE ID: Method Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		11/29/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		11/29/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		11/29/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		11/29/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		11/29/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		11/29/97	EPA 602
Surrogate:						11/29/97	EPA 602
cis-1,2-dichloroethene	97.0	N/A	% Rec	1.0		11/29/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		11/29/97	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	11/26/97	12/04/97	EPA3510GCFID

APPENDIX K

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	71.0	N/A	% Rec	1.0		11/29/97	EPA 602
Benzene	98.0	N/A	% Rec	1.0		11/29/97	EPA 602
Toluene	104	N/A	% Rec	1.0		11/29/97	EPA 602
Ethylbenzene	102	N/A	% Rec	1.0		11/29/97	EPA 602
m,p Xylene	108	N/A	% Rec	1.0		11/29/97	EPA 602
o Xylene	102	N/A	% Rec	1.0		11/29/97	EPA 602
Surrogate:						11/29/97	EPA 602
cis-1,2-dichloroethene	105	N/A	% Rec	1.0		11/29/97	EPA 602
TPHC Gasoline/water	91.7	N/A	% Rec	1.0		11/29/97	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	91.3	N/A	% Rec	1.0	11/26/97	12/04/97	EPA3510GCFID
TPHC - Motor Oil	90.6	N/A	% Rec	1.0	11/26/97	12/04/97	EPA3510GCFID

SAMPLE ID: Travel Blank FRAC.: 08A COLLECTED: N/A RECEIVED: 11/25/97

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		11/30/97	EPA 602
Benzene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Toluene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
o Xylene	ND	0.50	ug/L	1.0		11/30/97	EPA 602
Surrogate:						11/30/97	EPA 602
cis-1,2-dichloroethene	NA	N/A	% Rec	1.0		11/30/97	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		11/30/97	EPA5030GCFID

ATTACHMENT D

SUMMARY TABLE OF HISTORICAL GROUNDWATER LEVELS AND ANALYTICAL RESULTS

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-1	06/27/95	6.40	20.29
	12/20/95	2.78	23.91
	01/17/96	2.43	24.26
	02/23/96	2.39	24.30
	03/22/96	3.32	23.37
	04/29/96	2.95	23.74
	05/24/96	4.07	22.62
	06/25/96	6.92	19.77
	07/26/96	8.79	17.90
	08/23/96	10.38	16.31
	09/26/96	12.22	14.47
	10/28/96	13.19	13.50
	11/22/96	6.82	19.87
	12/27/96	2.41	24.28
	01/27/97	2.41	24.28
	02/28/97	2.64	24.05
	03/27/97	3.87	22.82
	04/24/97	3.39	23.30
	05/22/97	5.97	20.72
	06/30/97	8.26	18.43
	07/28/97	9.77	16.92
	08/26/97	11.43	15.26
	09/24/97	13.09	13.60
	10/22/97	13.93	12.76
	11/25/97	8.48	18.21
MW-2	06/27/95	6.40	19.64
	12/20/95	3.85	22.19
	01/17/96	3.17	22.87
	02/23/96	3.10	22.94
	03/22/96	4.82	21.22
	04/29/96	4.06	21.98
	05/24/96	4.58	21.46
	06/25/96	7.03	19.01
	07/26/96	8.02	18.02
	08/23/96	8.67	17.37
	09/26/96	9.06	16.98
	10/28/96	7.73	18.31
	11/22/96	4.22	21.82
	12/27/96	3.09	22.95
	01/27/97	3.13	22.91
	02/28/97	3.77	22.27
	03/27/97	5.38	20.66
	04/24/97	4.04	22.00
	05/22/97	6.40	19.64
	06/30/97	7.48	18.56
	07/28/97	8.48	17.56
	08/26/97	8.88	17.16
	09/24/97	8.61	17.43
	10/22/97	8.84	17.20
	11/25/97	4.88	21.16

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-3	06/27/95	11.55	12.90
	12/20/95	14.78	9.67
	01/17/96	10.18	14.27
	02/23/96	8.00	16.45
	03/22/96	8.80	15.65
	04/29/96	9.41	15.04
	05/24/96	10.32	14.13
	06/25/96	12.03	12.42
	07/26/96	14.40	10.05
	08/23/96	16.19	8.26
	09/26/96	16.05	8.40
	10/28/96	15.49	8.96
	11/22/96	14.44	10.01
	12/27/96	9.35	15.10
	01/27/97	7.09	17.36
	02/28/97	8.82	15.63
	03/27/97	9.73	14.72
	04/24/97	10.33	14.11
	05/22/97	11.27	13.18
	06/30/97	13.12	11.33
	07/28/97	15.23	9.22
	08/26/97	16.33	8.12
	09/24/97	15.75	8.70
	10/22/97	15.72	8.73
	11/25/97	14.53	9.92
MW-4	06/27/95	8.06	19.66
	12/20/95	5.11	22.61
	01/17/96	4.02	23.70
	02/23/96	3.76	23.96
	03/22/96	6.20	21.52
	04/29/96	5.15	22.57
	05/24/96	6.09	21.63
	06/25/96	8.56	19.16
	07/26/96	9.45	18.27
	08/23/96	10.01	17.71
	09/26/96	10.67	17.05
	10/28/96	9.34	18.38
	11/22/96	5.90	21.82
	12/27/96	3.72	24.00
	01/27/97	3.80	23.92
	02/28/97	4.96	22.76
	03/27/97	6.91	20.81
	04/24/97	5.41	22.31
	05/22/97	8.05	19.67
	06/30/97	9.11	18.61
	07/28/97	9.85	17.87
	08/26/97	10.37	17.35
	09/24/97	10.24	17.48
	10/22/97	10.54	17.18
	11/25/97	6.90	20.82

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
P-1	06/27/95	10.68	17.89
	12/20/95	10.39	18.18
	01/17/96	5.51	23.06
	02/23/96	4.73	23.84
	03/22/96	8.52	20.05
	04/29/96	7.57	21.00
	05/24/96	9.09	19.48
	06/25/96	10.64	17.93
	07/26/96	11.54	17.03
	08/23/96	12.88	15.69
	09/26/96	DRY	–
	10/28/96	13.34	15.23
	11/22/96	9.03	19.54
	12/27/96	4.14	24.43
	01/27/97	4.00	24.57
	02/28/97	7.25	21.32
	03/27/97	9.19	19.38
	04/24/97	8.09	20.48
	05/22/97	10.09	18.48
	06/30/97	11.26	17.31
	07/28/97	11.98	16.59
	08/26/97	13.56	15.01
	09/24/97	12.71	15.86
	10/22/97	13.21	15.36
	11/25/97	10.01	18.56

SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-1															
	06/28/95	<0.50	<50	<50	<500	<0.010	0.022	0.052	0.03	<0.020	0.43	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.049	<0.020	0.88	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.57	--	--	--	--
	08/23/96	<0.50	<50	<50	<500	<0.010	0.032	0.059	0.030	<0.020	0.27	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.97	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.023	<0.020	0.89	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	0.024	0.033	<0.020	0.36	--	9.6	80	2
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	11.2	60	90
MW-2															
	06/29/95	<0.50	<50	74 [1]	<500	--	--	--	--	0.036	1.1	<50	--	--	--
	02/23/96	<0.50	<50	180 [1]	<500	--	<0.0050	<0.020	<0.020	<0.020	1.1	--	--	--	--
	05/24/96	<0.50	<50	110 [1]	<500	<0.010	<0.0050	<0.020	0.34	<0.020	1.0	--	--	--	--
	08/23/96	<0.50	<50	64 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.90	--	--	--	--
	11/22/96	<0.50	<50	300 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.96	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.020	0.074	<0.020	1.3	--	--	--	--
	05/22/97	<0.50	<50	100 [1]	<500	<0.010	<0.010	0.026	0.082	<0.020	1.3	--	6.3	110	105
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.2	100	110
MW-3															
	06/29/95	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.031	<0.020	4.5	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	5.2	--	--	--	--
	08/23/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.5	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	3.1	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.2	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	<0.020	0.060	<0.020	3.6	--	7.4	200	
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	10.7	160	30
MW-4															
	06/29/95	<0.50	<50	<50	<500	<0.010	0.062	0.11	0.061	<0.020	1.7	<50	--	--	--
	12/20/95	--	--	--	--	<0.010	<0.0050	<0.020	0.020	<0.020	--	--	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.17	<0.020	2.1	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	0.38	<0.020	1.7	--	--	--	--
	08/23/96	<0.50	<50	52 [1]	<500	<0.010	0.014	0.034	<0.020	<0.020	1.9	--	--	--	--
	11/22/96	<0.50	<50	88 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	1.3	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.080	<0.020	2.1	--	--	--	--
	05/22/97	<0.50	<50	63 [1]	<500	<0.010	<0.010	0.024	0.060	<0.020	1.3	--	6.7	100	90
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.9	100	110

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil.
All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

APPENDIX K

APPENDIX K

CONSULTING ENGINEERS
& GEOLOGISTS

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Selvage, PE
Kjell Nelson, PE
Roland S. Johnson, Jr., C.E.G.

Reference: 930121.100

April 13, 1998

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: FIRST QUARTER 1998 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

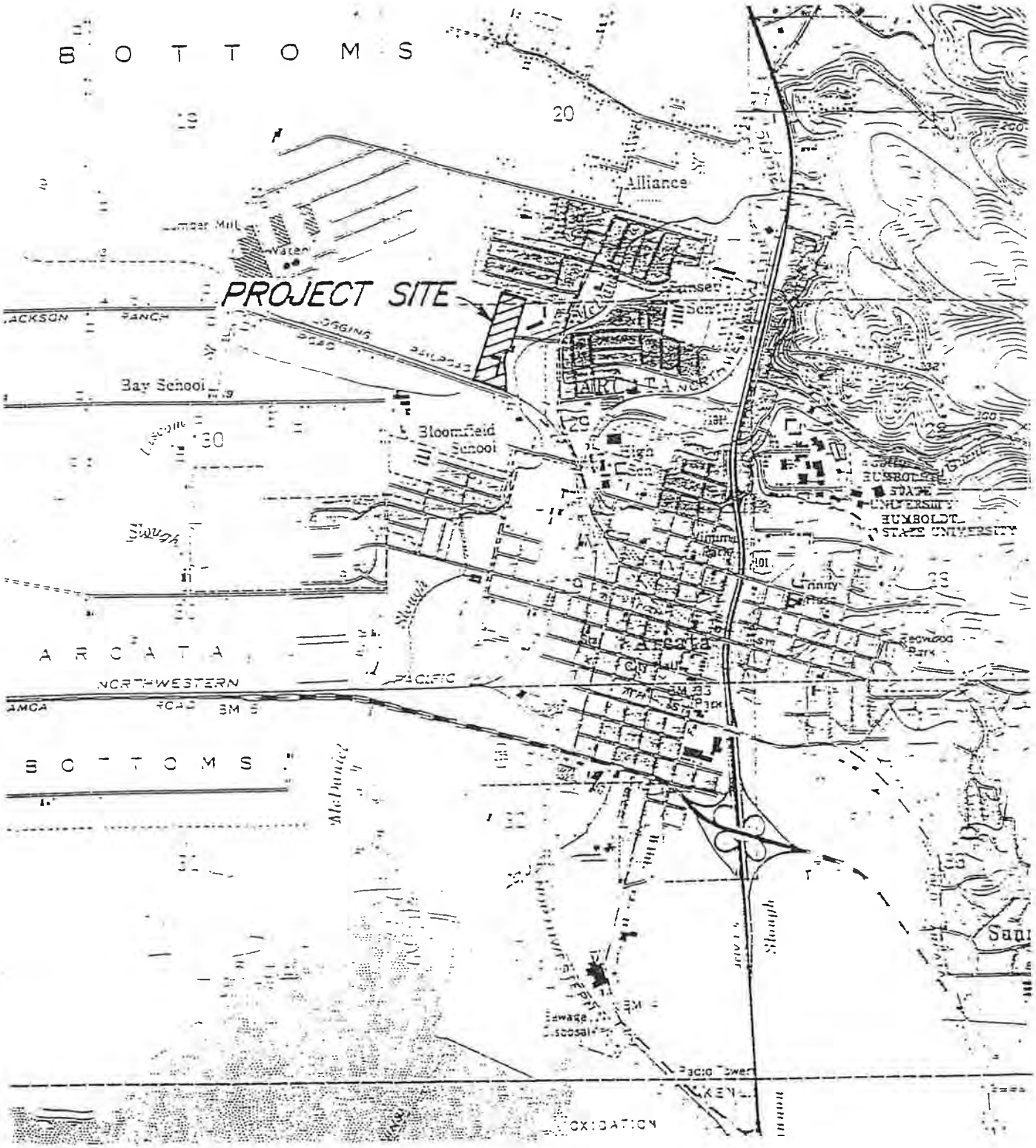
This First Quarter 1998 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995, and August 7, 1997 letters to ERS (Attachment A).

The report summarizes groundwater level and sampling data collected during December 1997, and January and February 1998. Groundwater monitoring well quarterly sampling was conducted in February 1998, for the modified well sampling program (HCDEH letter dated August 7, 1997) deleting dissolved metals, and Tannins and Lignins. Field notes and certified laboratory analytical reports follow in Attachments B and C, respectively.

Site work conducted this quarter, in addition to regularly scheduled monitoring, included the collection of surface water samples from Janes Creek, to be analyzed for Tannins and Lignins (HCDEH letter February 19, 1998, Attachment A).

Table 1 (on the following page) is a summary of the groundwater elevations measured at monitoring wells MW-1, MW-2, MW-3, MW-4, and piezometer P-1 during this reporting period.

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Using the data collected, SHN calculated groundwater flow direction and gradient for the months of December 1997, and January and February 1998. Data collected indicates that site groundwater levels measured increased early then leveled out in the last of the quarter, and are generally lower elevations this



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

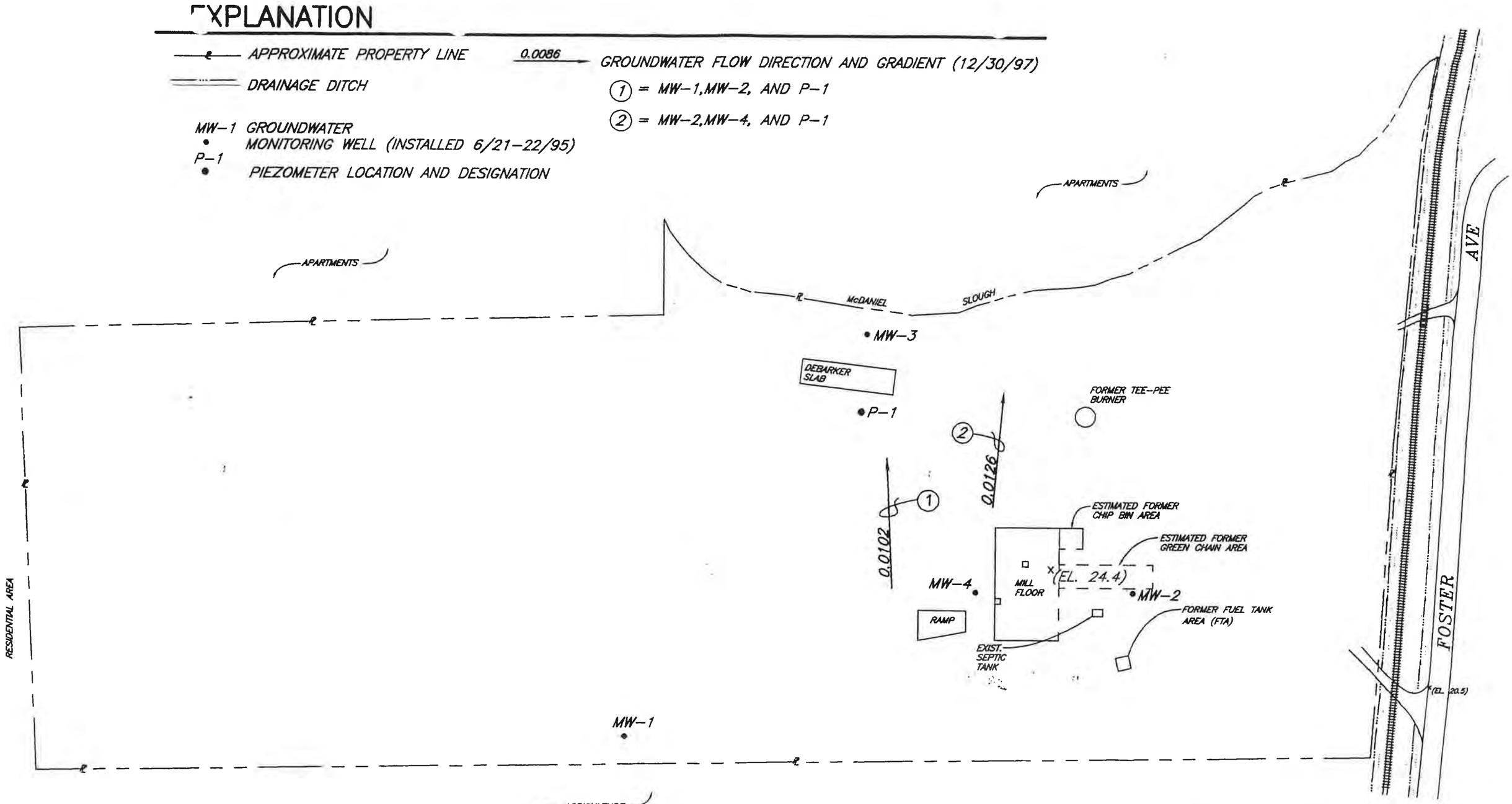
SHN

FIGURE 1

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	12/30/97	4.22	22.47
MW-2	12/30/97	4.88	21.16
MW-3	12/30/97	12.77	11.675
MW-4	12/30/97	6.37	21.35
P-1		9.49	19.08
MW-1	1/27/98	2.41	24.28
MW-2	1/27/98	3.43	22.61
MW-3	1/27/98	9.20	15.245
MW-4	1/27/98	3.80	23.92
P-1	1/27/98	5.42	23.15
MW-1	2/26/98	2.37	24.32
MW-2	2/26/98	3.51	22.53
MW-3	2/26/98	7.20	17.245
MW-4	2/26/98	4.10	23.62
P-1	2/26/98	5.96	22.61

year relative to the corresponding time last year. Site water levels rose significantly in December 1997 in apparent response to above normal rainfall conditions. The pattern of shifting groundwater direction is very similar to the corresponding time last year. The groundwater flow direction and gradient for the months of December 1997, and January and February 1998, are represented by two monitoring well cluster configurations (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figures 2, 3, and 4, respectively. Well cluster MW-1, MW-2, P-1 is representative of the groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area. The calculated groundwater flow direction between last quarter (November) and this quarter (three months) indicates the previously documented seasonal shift in flow direction from the east and northeast toward the east and south-southeast (well cluster dependent).



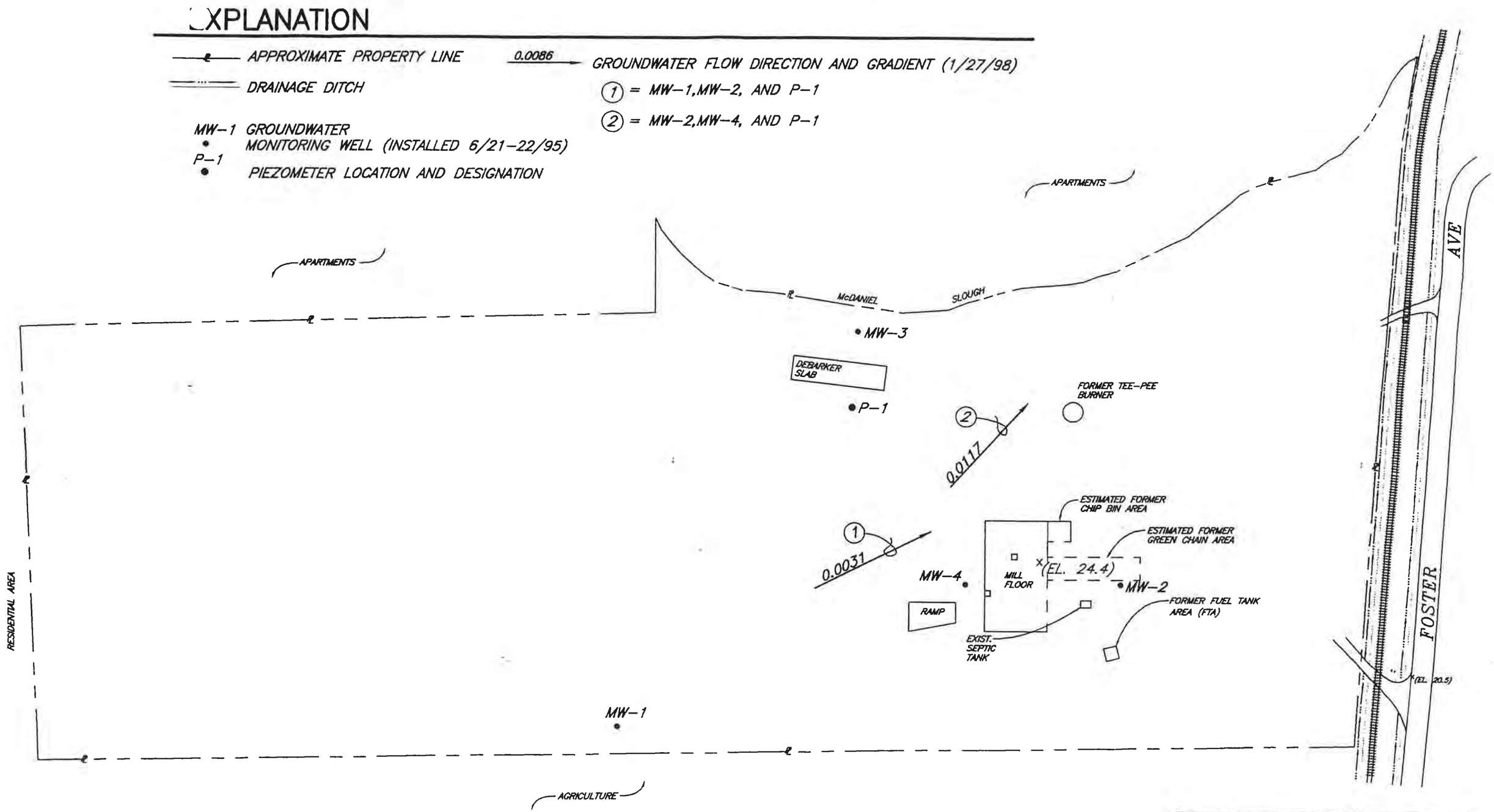
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
MARCH, 1998

FIGURE **2**

930121U2



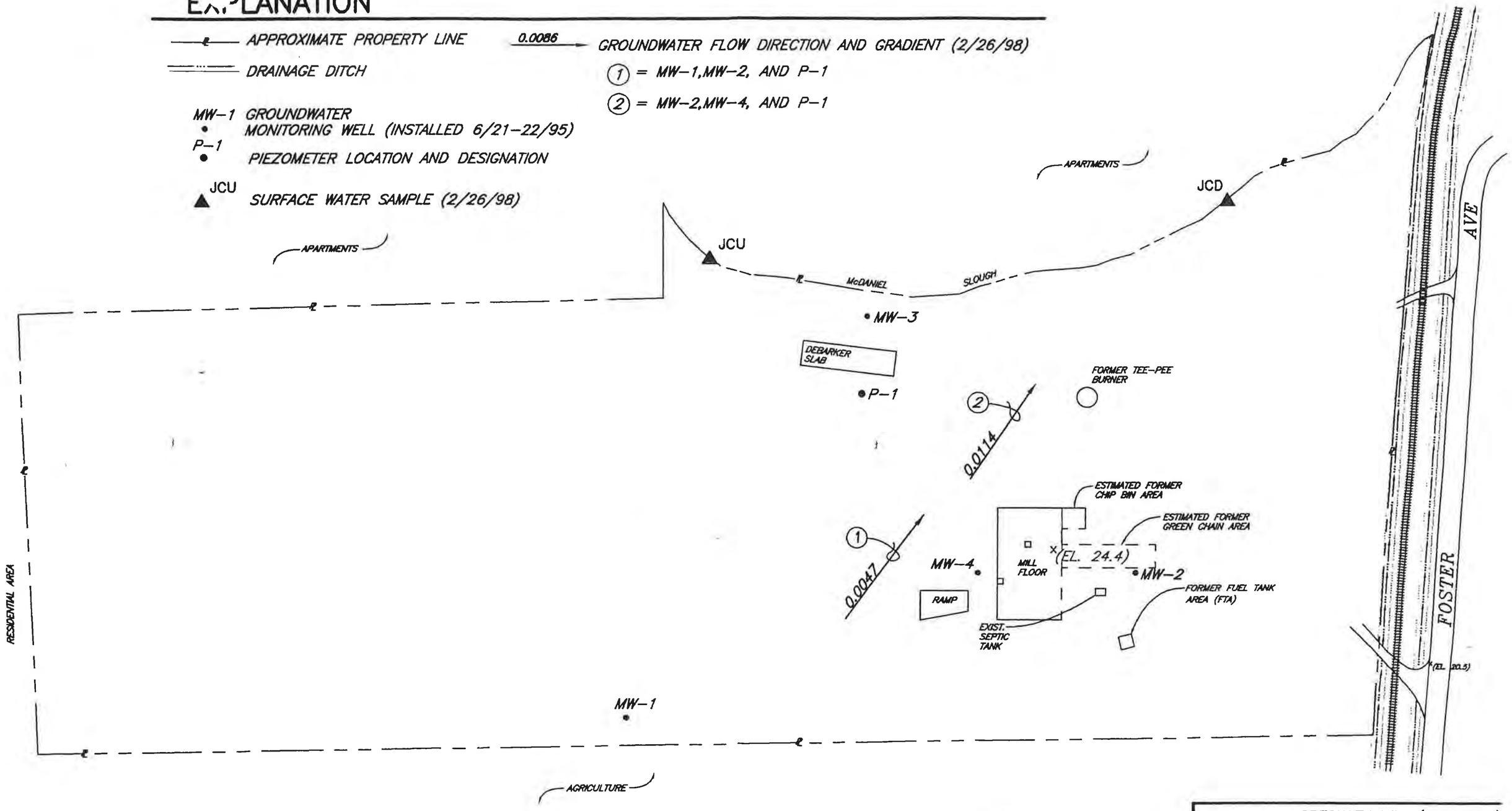
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
MARCH, 1998

FIGURE 3

930121D2



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
MARCH, 1998

FIGURE 4

930121D.

Groundwater samples were collected on February 26, 1998, for all required constituents from wells MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data, including the water quality parameters carbon dioxide [CO_2], oxidation/reduction potential [Eh], dissolved oxygen [DO], electrical conductivity [EC], and pH). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. Table 2 summarizes the first quarter 1998 sample analytical results. See Attachment C for analytical results and chain-of-custody documentation.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)
MW-1		<0.50	<50	<50	<500
MW-2		<0.50	<50	<50	<500
MW-3		<0.50	<50	<50	<500
MW-4		<0.50	<50	<50	<500
QC-1/MW-3		<0.50	<50	<50	<500

QC-1 = Quality Control Sample
--- = not sampled

Groundwater flow in the mill/debarker slab area was toward the southeast, during this quarter. Groundwater analytical results from all wells indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) were below the method reporting limits. Geochemical parameters collected during the February 1998 groundwater monitoring event are summarized in Table 3.

TABLE 3
GEOCHEMICAL PARAMETER MEASUREMENT

WELL#	Date	DCO_2	DO	Eh
MW-1	02/26/98	60	7.1	94
MW-2	02/26/98	50	5.7	127
MW-3	02/26/98	130	8.2	108
MW-4	02/26/98	70	6.0	123

DO concentrations detected in site wells are sufficient to support biodegradation, and Eh measurements indicate that aerobic conditions exist at the site. DCO_2 concentrations are sufficient to indicate that biodegradation may be occurring at the site. The conclusion that biodegradation is occurring is supported by the lack of petroleum hydrocarbon constituents in any of the site wells which are located downgradient of former petroleum hydrocarbon source areas.

To ensure the integrity of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected during this monitoring event. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-3), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses for the constituents analyzed.

SHN sampled Janes Creek, in February, for Tannins and Lignins during high stream flow conditions. This sampling was conducted for a reference of surface water quality and to check potential differences between historic groundwater data and the surface water at the site. As surface water Tannins and Lignins will vary considerably with stream conditions, the comparison is only for gross information. Upstream sample JCU was analyzed at 1.5 mg Tannin/L, and downstream sample JCD was analyzed at 1.4 mg Tannin/L. Sampling locations are indicated on Figure 4, and laboratory analytical reports are included in Attachment C. Historical data for Tannins and Lignins in site monitoring well groundwater is presented in Attachment D.

Dissolved oxygen (DO) samples were not submitted for laboratory analyses this quarter. SHN believes the samples measured at the time of well sampling are indicative of site conditions, whereas samples collected and transferred to the lab will be susceptible to temperature differences and handling inconsistencies that directly effect the DO level, and thus not representative of site conditions.

Quarterly monitoring and reporting will continue, for the existing monitoring wells and piezometer P-1, including geotechnical parameter measurement and required analytical suite. Monthly water level measurements in all monitoring wells and P-1 will be continued, as requested by the HCDEH.

CONSULTING ENGINEERS
& GEOLOGISTS

Dale Dell'Osso
First Quarter 1998 Groundwater Monitoring Report
April 13, 1998
Page 5

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
Exp 3-31-2002
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:lms
Attachments (A, B, C & D, plus 4 figures)
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

ATTACHMENT A

CORRESPONDENCE

APPENDIX K

RE' FEB 23 1998

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

100 H STREET, SUITE 100, EUREKA, CA 95501

(707) 445-6215
FAX (707) 441-5699

19 February 1998

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: **Eel River Saw Mills Inc. -- Specialty Mill Site**
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the 19 December 1997 letter prepared by SHN Consulting Engineers and Geologists (SHN). SHN indicates that you have listed the property for sale for potential residential development. SHN has requested on your behalf written statement concurring that the site is suitable for redevelopment. We understand the Specialty Mill site is proposed as residential development. SHN has indicated that a contingency plan will be submitted similar to that prepared for the Windsong Subdivision and the Aldergrove Industrial Park. The contingency plan should address the proposed site use and associated concerns regarding protection of public health. This contingency plan needs to be submitted in order for our agency to prepare the requested redevelopment letter.

We have also received and reviewed the 30 December 1997 *"Fourth Quarter 1997 groundwater Monitoring Report "* prepared by SHN. We concur with the recommendation in the report. We request that groundwater samples be collected and submitted to the laboratory for dissolved oxygen analysis in order to validate the field meter results. Analysis of water samples from Janes Creek for tannins and lignins may be deleted after the next quarterly sampling event is completed.

Please submit the requested information by 20 March 1998. We would be pleased to meet with you and any prospective buyers to address these concerns. I look forward to receiving the requested information and working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.010/697L

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists

12518.003

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Please submit the requested information by 30 September 1997. I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

DRD:fd
cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.005/697L

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

7 August 1997

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the quarterly monitoring reports and the 12 June 1997 letter prepared by SHN Consulting Engineers and Geologists (SHN). We have the following comments.

- Analysis for dissolved metals, tannins and lignins may be deleted from the analytical suite.
- Please provide the methodology used to collect dissolved oxygen measurements.
- The laboratory has noted that the water samples containing material in the diesel range of molecular weights does not match the typical peak pattern for diesel fuel. Please submit copies of the chromatograms for review. Considering the site history as a wood mill, it is possible that the material reported as diesel may be biogenic in origin. We recommend that an alumina or silica gel cleanup be performed on all future samples to eliminate biogenic interference. This method should also be applied to soil samples from the biotreatment cells at the Metropolitan Mill.
- A contingency and remedial plan need to be developed for investigation and handling of potentially contaminated soil that may be encountered during site redevelopment.

ATTACHMENT B

FIELD DATA

APPENDIX K

DAIL FIELD REPORT

JOB NO 093121.100
PAGE 1 of 1

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 2-26-98 / DAY OF WEEK Thursday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Quarterly Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Overcast	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0821. Then I took water levels in this order mw-1, p-1, mw-3, mw-4 and mw-2 de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Then I purged mw-1 with a 2" TEFLON bailer and then sampled with a disposable bailer. Then I purged mw-3 with the 2" TEFLON bailer until I had dried it up twice. Then I purged mw-4 with the 2" TEFLON bailer and sampled with a disposable bailer. Then I purged mw-2 with the 2" TEFLON bailer and sampled with a disposable bailer. I de-coned the 2" TEFLON bailer after purging each well by scrubbing it with Liquinox then rinsing it with DI water. Purge water from these 4 wells was put into a 55 gal. drum that I stored behind the 10" cement footing. There are 2 full 55 gal. drums stored in the bushes by mw-1. Then I sampled James Creek Downstream (JCD) and James Creek Upstream (JCU) at spots pre-determined by Marty Lay. Then I sampled mw-3 with a disposable bailer.

QC-1 came out of mw-3.

Secured all wells with caps and lids.

Left site for NCL at 1411.

Mileage miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

GROUND WATER ELEVATIONS

JOB NO.: 093121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave, Arcata CA

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1 (3 ±.1')	11-25-97	26.69	8.48	18.21
MW-2 (5 ±.1')		26.04	4.88	21.16
MW-3 (2 ±.1')		24.445	14.53	9.915
MW-4 (4 ±.1')		27.72	6.90	20.82
P-1 (1 ±.1')	↓	28.57	10.01	18.56
MW-1 (3)	12-30-97	26.69	4.22	22.47
MW-2 (5)		26.04	4.88	21.16
MW-3 (2)		24.445	12.77	11.675
MW-4 (4)		27.72	6.37	21.35
P-1 (1)	↓	28.57	9.49	19.08
mw-1	1/27/98 DRP	26.69	2.41	24.28
mw-2		26.04	3.43	22.61
mw-3		24.445	9.20	15.245
mw-4		27.72	3.80	23.92
P-1	↓	28.57	5.42	23.15
mw-1	2/26/98 DRP	26.69	2.37	24.32
mw-2		26.04	3.51	22.53
mw-3		24.445	7.20	17.245
mw-4		27.72	4.10	23.62
P-1	↓	28.57	5.96	22.61

CC Coburn

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100 DATE 2-26-98
CLIENT Eel River Sawmills SAMPLER David R. Palmer
WELL NO. MW-1 ELEVATION
TOTAL DEPTH 14.78 WATER
DEPTH ELEVATION
TO WATER 2.37 (0.16)
HT OF WATER COLUMN 12.41 X (~~0.66~~) = CASING VOL 1.99 x 3 = 5.96

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				2.37	0919	0 gal.			
					0923	2 gal.	298	53.9°	6.34
					0929	4 gal.	292	52.5°	6.35
					0937	6 gal.	292	52.5°	6.39
	60	7.1	94		0941	6.25 gal.			

TOTAL 6.3 gal.
INITIAL WATER VOLME 2.0 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1000
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS
Recharged to 2.37 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100
CLIENT Eel River Sawmills
WELL NO. MW-4
TOTAL DEPTH 14.54
DEPTH TO WATER 4.10
HT OF WATER COLUMN 10.44 X (0.16) = CASING VOL 1.67 X 3 = 5.01

DATE 2-26-98
SAMPLER David R. Pawlowski
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				4.10	1125	0 gal.			
					1128	1.75 gal.	366	55.6°	6.23
					1133	3.50 gal.	372	54.2°	6.17
					1137	5 gal.	379	54.1°	6.20
	70	6.0	123		1141	5.25 gal.			

TOTAL 5.3 gal.
INITIAL WATER VOLME 1.7 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1200
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS Recharged to 4.23 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100
CLIENT Eel River Sawmills
WELL NO. MW-2
TOTAL DEPTH 12.05
DEPTH TO WATER 3.51
HT OF WATER COLUMN 8.54 X (~~0.66~~ 0.16) = CASING VOL 1.37 x 3 = 4.10

DATE 2-26-98
SAMPLER David R. Pain
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				3.51	1215	0 gal.			
					1218	1.50 gal.	256	56.8°	6.13
					1222	3 gal.	273	54.8°	6.14
					1226	4.25 gal.	283	54.6°	6.18
	50	5.7	127		1231	4.50 gal.			

TOTAL 4.5 gal.
INITIAL WATER VOLME 1.4 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1300
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS
Recharged to 3.61 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100 DATE 2-26-98
CLIENT Eel River Sawmills SAMPLER David R. Pawley
WELL NO. MW-3 ELEVATION
TOTAL DEPTH 25.90 WATER
DEPTH ELEVATION
TO WATER 7.20
HT OF WATER COLUMN 18.70 X ~~(0.16)~~ (0.16) = CASING VOL 2.99 x 3 = 8.98

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				7.20	1019	0 gal.			
					1025	3 gal.	1094	55.6°	6.66
				Empty	1034	5 gal.	1066	55.1°	6.64
				Empty	1049 1055	5.75 gal.	996	55°	6.78
	130	8.2	108	Empty	1106	5.90 gal.			

TOTAL 5.9 gal.
INITIAL WATER VOLME 3.0 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1400
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS QC-1
Recharged to 11.84 at sampling time

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc.
Address: RT. 1 Box 459A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 093121.100
Project Name: ERS Speciality Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX	ANALYSIS: TPHD/MO	ANALYSIS: Tannin + Lignin
	MW-1	2/26/98	1000	GW	b	9	X	X	
	MW-3		1400				X	X	
	MW-4		1200				X	X	
	MW-2		1300				X	X	
	QC-1	↓	—	↓			X	X	
	JCD	2/26/98	1315	SW		3			X
	JCU	↓	1330	↓					X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—NCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R Paine	2/26/98 1700	Dan Z	2/26/98 1425

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

APPENDIX K

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills Inc.	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 1-27-98	DAY OF WEEK Tuesday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Semi-Overcast	TECHNICIAN David R. Paine	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, ect)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 1139. Then I took water levels in this order mw-1, P-1, mw-3, mw-4 and mw-2 de-canin the sounder after each well by scrubbing it with liquinex then rinsing it with DI water.
Left site at 1212.

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

GROUND WATER ELEVATIONS

JOB NO.: 093121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave, Arcata CA

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1 (3 new)	11-25-97	26.69	8.48	18.21
MW-2 (5 new)		26.04	4.88	21.16
MW-3 (2 new)		24.445	14.53	9.915
MW-4 (4 new)		27.72	6.90	20.82
P-1 (1 new)		28.57	10.01	18.56
MW-1 (3)	12-30-97	26.69	4.22	22.47
MW-2 (5)		26.04	4.88	21.16
MW-3 (2)		24.445	12.77	11.675
MW-4 (4)		27.72	6.37	21.35
P-1 (1)		28.57	9.49	19.08
MW-1	1/27/98 DRP	26.69	2.41	24.28
MW-2		26.04	3.43	22.61
MW-3		24.445	9.20	15.245
MW-4		27.72	3.80	23.92
P-1		28.57	5.42	23.15

CE Oburn

APPENDIX K

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 2

PROJECT NAME: ERS Specialty Mill	CLIENT/OWNER: ERS	DAILY FIELD REPORT SEQUENCE NO: 1	
GENERAL LOCATION OF WORK: Foster Ave, Arcata	OWNER/CLIENT REPRESENTATIVE: Dennis Scott/Rick Steed	DATE: 12/30/97	DAY OF WEEK: Tuesday
GENERAL CONTRACTOR: n/a	GRADING CONTRACTOR: n/a	PROJECT ENGINEER: Marty Kay	
TYPE OF WORK: Water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN: n/a	SUPERVISOR:	
SOURCE & DESCRIPTION OF FILL MATERIAL: n/a	WEATHER: Slightly overcast	TECHNICIAN: Curtis Coburn	
	KEY PERSONS CONTACTED (Cmty Exec, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

I arrive on-site @ 0926. I open the well, take the water level, & secure the well of P-1, MW-3, MW-1, MW-4, & MW-2 (in order). I thoroughly clean the sounder tip w/ DI & Liquinox before/ starting & after each measurement. I use a new pair of latex gloves for each measurement. I secure the front gate before leaving. I leave site @ 1017.

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: Coburn

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

APPENDIX K

GROUND WATER ELEVATIONS

JOB NO.: 093121.100
CLIENT: Eel River Sawmills
LOCATION: Foster Ave, Arcata CA

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1 (3 ~~+1.5~~)	11-25-97	26.69	8.48	18.21
MW-2 (5 ~~+1.5~~)		26.04	4.88	21.16
MW-3 (2 ~~+1.5~~)		24.445	14.53	9.915
MW-4 (4 ~~+1.5~~)		27.72	6.90	20.82
P-1 (1 ~~+1.5~~)	↓	28.57	10.01	18.56
MW-1 (3)	12-30-97	26.69	4.22	22.47
MW-2 (5)		26.04	4.88	21.16
MW-3 (2)		24.445	12.77	11.675
MW-4 (4)		27.72	6.37	21.35
P-1 (1)	↓	28.57	9.49	19.08

CE Coburn

ATTACHMENT C

ANALYTICAL RESULTS

APPENDIX K

REC'D MAR 13 1998

NORTH COAST LABORATORIES LTD.

DATE: March 9, 1998

REPORT TO: Eel River Saw Mill
1053 Northwestern Ave.
Fortuna, CA 95540

ATTENTION: Dennis Scott

NCL Work Order: 98-02-536

ADDENDUM TO CHEMICAL EXAMINATION REPORT

TPHC Diesel/Motor Oil	All of the diesel samples were analyzed using a diesel/motor oil temperature program. A surrogate is not added to the diesel/motor oil analyses because the surrogate elutes in the motor oil range.
BTXE	A surrogate was not added to the BTXE samples due to an auto-injector malfunction.

Laboratory Supervisor

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

NORTH COAST LABORATORIES LTD.

Date: 03/09/98 REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

WORK ORDER 98-02-536

INVOICE # 60064684

Attn: Dennis Scott

WORK ID: 093121.100/ERS Speciality

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
02	MW-3
02	MW-3
03	MW-4
03	MW-4
04	MW-2
04	MW-2
05	QC-1
05	QC-1
06	JCD
07	JCU
08	Method Blank
09	Lab. Control Sample

Comments:

Notes and Definitions:

Limit = Reporting Limit NQ = Not Quantifiable
ND = None Detected NR = Not Requested

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/03/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Surrogate:						03/03/98	EPA 602
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0		03/03/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/03/98	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 02A COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/03/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Surrogate:						03/03/98	EPA 602
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0		03/03/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/03/98	EPA5030GCFID

Date: 03/09/98
Work Order: 98-02-536
Invoice #: 60064684

REPORT

SAMPLE ID: MW-3 FRAC.: 02B COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 03A COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/03/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Surrogate:						03/03/98	EPA 602
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0		03/03/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/03/98	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 03B COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 04A COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/03/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Surrogate:						03/03/98	EPA 602

Date: 03/09/98
Work Order: 98-02-536
Invoice #: 60064684

REPORT

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0		03/03/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/03/98	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 04B COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/03/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/03/98	EPA 602
Surrogate:						03/03/98	EPA 602
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0		03/03/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/03/98	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05B COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID

SAMPLE ID: JCD FRAC.: 06A COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.4	0.10	mg Tannin/L	1.0		03/04/98	SM 5550B

APPENDIX K

SAMPLE ID: JCU FRAC.: 07A COLLECTED: 02/26/98 RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Tannin and Lignin	1.5	0.10	mg Tannin/L	1.0		03/04/98	SM 5550B

SAMPLE ID: Method Blank FRAC.: 08A COLLECTED: N/A RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		03/02/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		03/02/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		03/02/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		03/02/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		03/02/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		03/02/98	EPA 602
Surrogate:						03/02/98	EPA 602
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0		03/02/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		03/02/98	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	03/02/98	03/06/98	EPA3510GCFID
Tannin and Lignin	ND	0.10	mg Tannin/L	1.0		03/04/98	SM 5550B

SAMPLE ID: Lab. Control Sample FRAC.: 09A COLLECTED: N/A RECEIVED: 02/26/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	109	N/A	% Rec	1.0		03/02/98	EPA 602
Benzene	99.6	N/A	% Rec	1.0		03/02/98	EPA 602
Toluene	98.0	N/A	% Rec	1.0		03/02/98	EPA 602
Ethylbenzene	101	N/A	% Rec	1.0		03/02/98	EPA 602
m,p Xylene	98.1	N/A	% Rec	1.0		03/02/98	EPA 602
o Xylene	99.7	N/A	% Rec	1.0		03/02/98	EPA 602
Surrogate:						03/02/98	EPA 602
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0		03/02/98	EPA 602
TPHC Gasoline/water	76.9	N/A	% Rec	1.0		03/02/98	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	86.7	N/A	% Rec	1.0	03/02/98	03/06/98	EPA3510GCFID
TPHC - Motor Oil	98.4	N/A	% Rec	1.0	03/02/98	03/06/98	EPA3510GCFID
Tannin and Lignin	110	N/A	% Rec	1.0		03/04/98	SM 5550B

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9902536

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc.
Address: RT. 1 Box 459A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Marty Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 093121.100
Project Name: ERS Speciality Mill
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX	ANALYSIS: TPHD/mo	ANALYSIS: Tannins + Lignins
1	MW-1	2/26/98	1000	GW	b	9	X	X	
2	MW-3	↓	1400	↓		7	X	X	
3	MW-4		1200				X	X	
4	MW-2		1300				X	X	
5	QC-1	↓	—	↓			X	X	
6	JCD	2/26/98	1315	SW		3			X
7	JCU	↓	1330	↓					X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—NCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	2/26/98 1422	Jay Li	2/26/98 1425

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

ATTACHMENT D

SUMMARY TABLE OF HISTORICAL GROUNDWATER LEVELS AND ANALYTICAL RESULTS

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-1															
	06/28/95	<0.50	<50	<50	<500	<0.010	0.022	0.052	0.03	<0.020	0.43	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.049	<0.020	0.88	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.57	--	--	--	--
	08/23/96	<0.50	<50	<50	<500	<0.010	0.032	0.059	0.030	<0.020	0.27	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.97	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.023	<0.020	0.89	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	0.024	0.033	<0.020	0.36	--	9.6	80	200
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	11.2	60	90
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	19.02 [2]	55	29
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.1	60	94
MW-2															
	06/29/95	<0.50	<50	74 [1]	<500	--	--	--	--	0.036	1.1	<50	--	--	--
	02/23/96	<0.50	<50	180 [1]	<500	--	<0.0050	<0.020	<0.020	<0.020	1.1	--	--	--	--
	05/24/96	<0.50	<50	110 [1]	<500	<0.010	<0.0050	<0.020	0.34	<0.020	1.0	--	--	--	--
	08/23/96	<0.50	<50	64 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.90	--	--	--	--
	11/22/96	<0.50	<50	300 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.96	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.020	0.074	<0.020	1.3	--	--	--	--
	05/22/97	<0.50	<50	100 [1]	<500	<0.010	<0.010	0.026	0.082	<0.020	1.3	--	6.3	110	105
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.2	100	110
	11/25/97	<0.50	<50	140	<500	--	--	--	--	--	--	--	8.8	90	98
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.7	50	127

Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

DO value not realistic, disregard.

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-3															
	06/29/95	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.031	<0.020	4.5	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	5.2	--	--	--	--
	08/23/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.5	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	3.1	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.2	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	<0.020	0.060	<0.020	3.6	--	7.4	200	110
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	10.7	160	30
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.05	165	-27
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	8.2	130	108
MW-4															
	06/29/95	<0.50	<50	<50	<500	<0.010	0.062	0.11	0.061	<0.020	1.7	<50	--	--	--
	12/20/95	--	--	--	--	<0.010	<0.0050	<0.020	0.020	<0.020	--	--	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.17	<0.020	2.1	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	0.38	<0.020	1.7	--	--	--	--
	08/23/96	<0.50	<50	52 [1]	<500	<0.010	0.014	0.034	<0.020	<0.020	1.9	--	--	--	--
	11/22/96	<0.50	<50	88 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	1.3	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.080	<0.020	2.1	--	--	--	--
	05/22/97	<0.50	<50	63 [1]	<500	<0.010	<0.010	0.024	0.060	<0.020	1.3	--	6.7	100	90
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.9	100	110
	11/25/97	<0.50	<50	94	<500	--	--	--	--	--	--	--	8.47	110	48
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.0	70	123

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

APPENDIX K

APPENDIX K

SHN
CONSULTING ENGINEERS
& GEOLOGISTS

John R. Selvage, P.E.
K. Jeff Nelson, P.E.
Roland S. Johnson, Jr. C.E.G.

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(530) 221-5424
FAX (530) 221-0135

Reference: 930121.100

June 22, 1998

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: SECOND QUARTER 1998 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

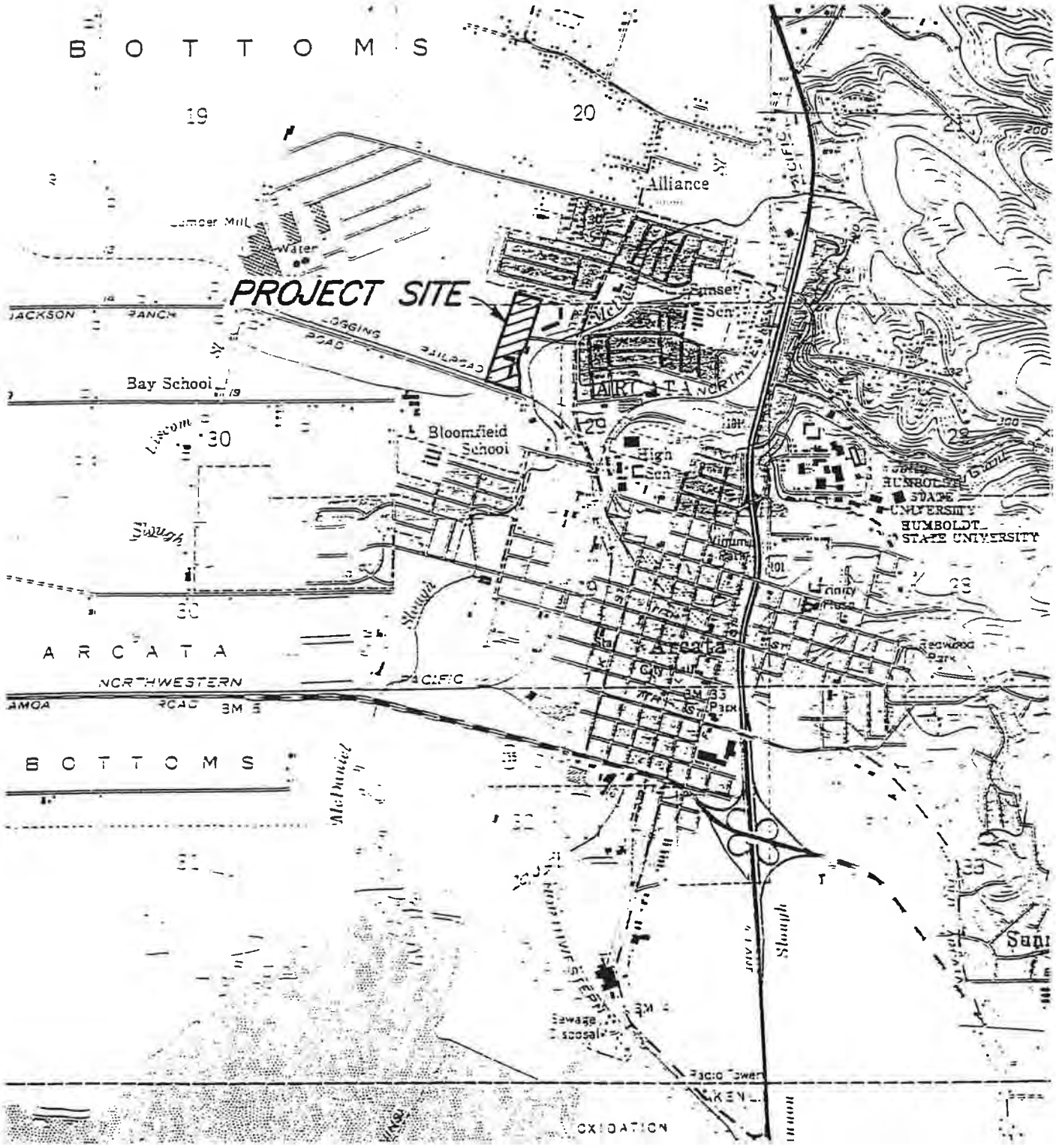
This Second Quarter 1998 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995, and August 7, 1997 letters to ERS (Attachment A).

The report summarizes groundwater level and sampling data collected during March, April, and May 1998. SHN did not collect the HCDEH requested groundwater samples for laboratory analysis of dissolved oxygen for comparison against field measurements. SHN conducted said sampling comparison (with same field meter) at another current site (Sauers-Rio Dell) and data has been submitted to the HCDEH. Data indicates that the laboratory analysis and the field measurement for dissolved oxygen are relatively comparable, given the diverse conditions of on site measurement disturbed sampling, when compared to transport (temperature, agitation) to an analytical laboratory.

Groundwater monitoring well quarterly sampling was conducted in May 1998, for the modified well sampling program (HCDEH letter dated August 7, 1997) deleting dissolved metals, and Tannins and Lignins. Field notes and certified laboratory analytical reports follow in Attachments B and C, respectively.

Additionally, this report requests that the HCDEH rescind monitoring and reporting requirements for this site based upon historical monitoring information presented later in this document.

Table 1 (on the following page) is a summary of the groundwater elevations measured in monitoring wells MW-1, MW-2, MW-3, MW-4, and piezometer P-1 during this reporting period.



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

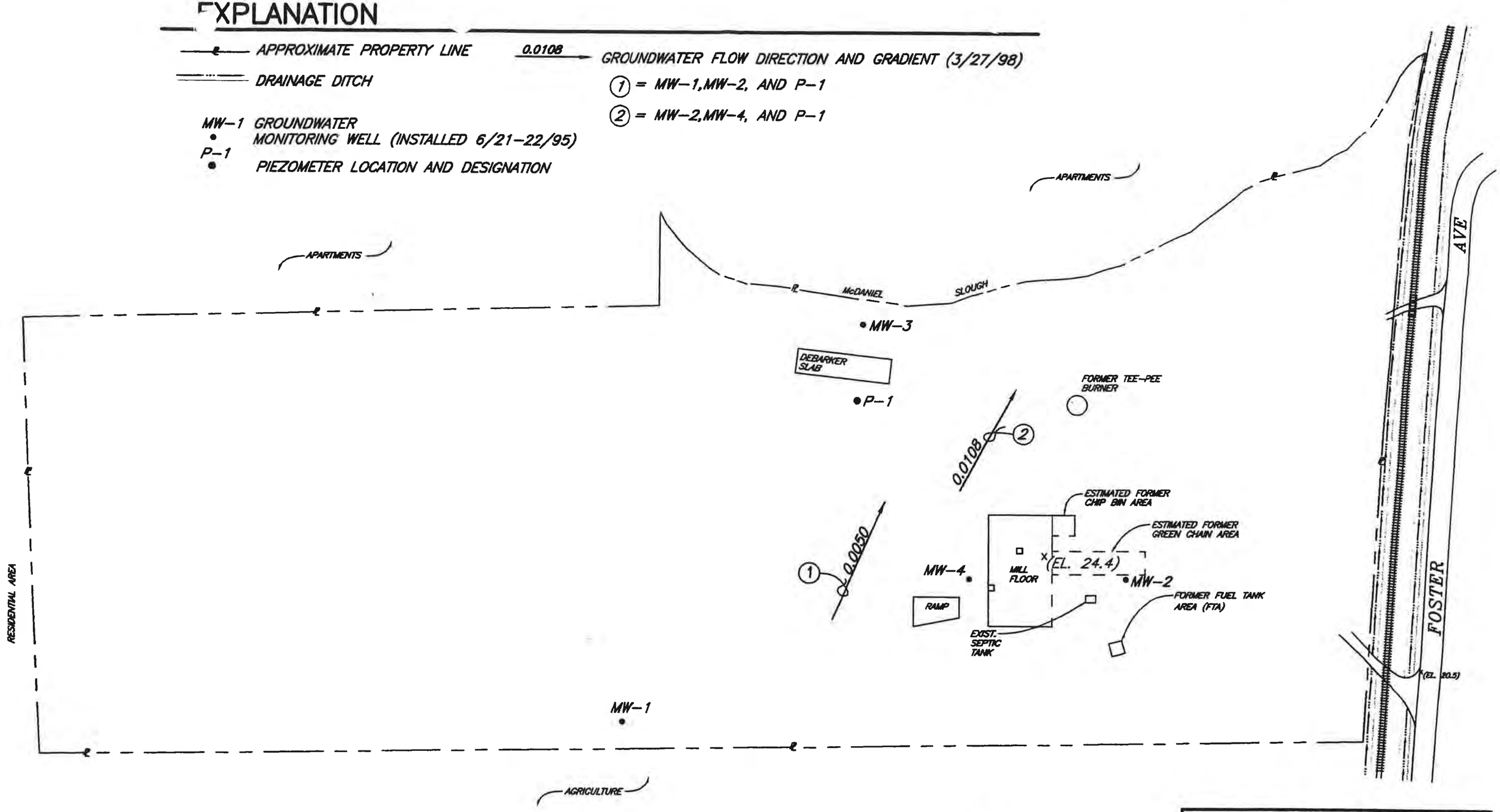
FIGURE 1

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Using the data collected, SHN calculated groundwater flow direction and gradient for the months of March, April, and May 1998. Data collected indicates that site groundwater levels measured decreased during the quarter, and are generally lower than the previous quarter.

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	3/27/98	2.35	24.34
MW-2		3.46	22.58
MW-3		7.89	16.555
MW-4		4.25	23.47
P-1		6.26	22.31
MW-1	4/24/98	3.24	23.45
MW-2		4.89	21.15
MW-3		9.15	15.295
MW-4		6.38	21.34
P-1		8.65	19.92
MW-1	5/28/98	4.36	22.33
MW-2		4.74	21.30
MW-3		10.08	14.365
MW-4		6.63	21.09
P-1		9.14	19.43

Site water levels decreased in apparent response to decreasing rainfall conditions. The groundwater flow direction and gradient for the months of March, April, and May 1998, are represented by two monitoring well cluster configurations (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figures 2, 3, and 4, respectively. Well cluster MW-1, MW-2, P-1 is representative of the groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area. The calculated groundwater flow direction between last quarter (February) and this quarter (three months) indicates the previously documented seasonal shift in flow direction from the east toward the southeast (well cluster dependent).



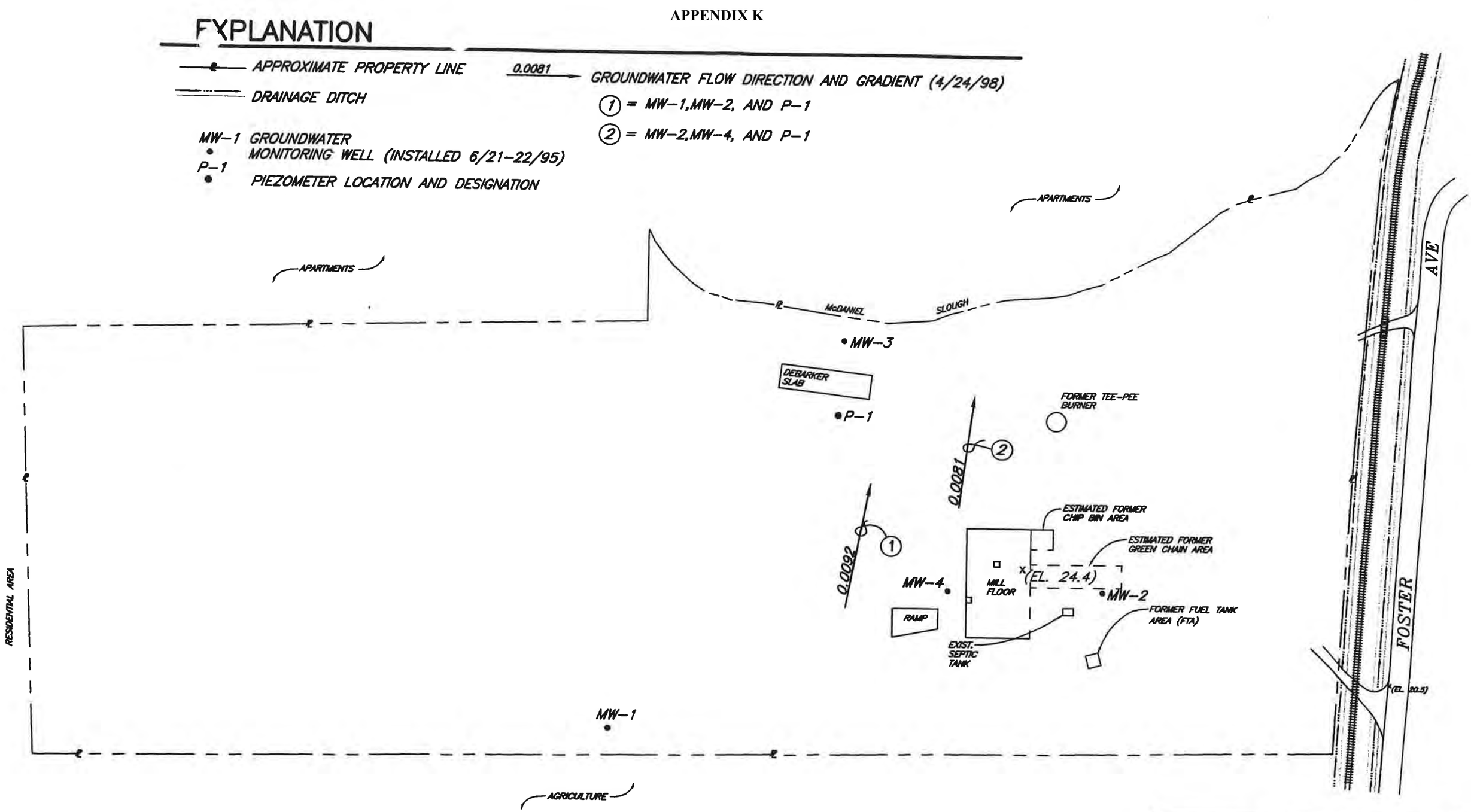
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
JUNE, 1998

FIGURE **2**

9_121__


EXPLANATION
APPROXIMATE PROPERTY LINE
DRAINAGE DITCH
MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)
P-1 PIEZOMETER LOCATION AND DESIGNATION
0.0081 GROUNDWATER FLOW DIRECTION AND GRADIENT (4/24/98)
(1) = MW-1,MW-2, AND P-1
(2) = MW-2,MW-4, AND P-1
APARTMENTS
APARTMENTS
McDANIEL SLOUGH
MW-3
DEBARKER SLAB
P-1
FORMER TEE-PEE BURNER
0.0081
0.0092
ESTIMATED FORMER CHIP BIN AREA
ESTIMATED FORMER GREEN CHAIN AREA
MW-4
MILL FLOOR
(EL. 24.4)
MW-2
RAMP
FORMER FUEL TANK AREA (FTA)
EXIST. SEPTIC TANK
FOSTER AVE
(EL. 20.5)
RESIDENTIAL AREA
MW-1
AGRICULTURE
0 50 100 Feet
SCALE: 1" = 100'
ALL LOCATIONS ARE APPROXIMATE
SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11
GROUNDWATER FLOW DIRECTION AND GRADIENT
SHN 930121.100
JUNE, 1997
FIGURE 3

EXPLANATION

APPROXIMATE PROPERTY LINE

DRAINAGE DITCH

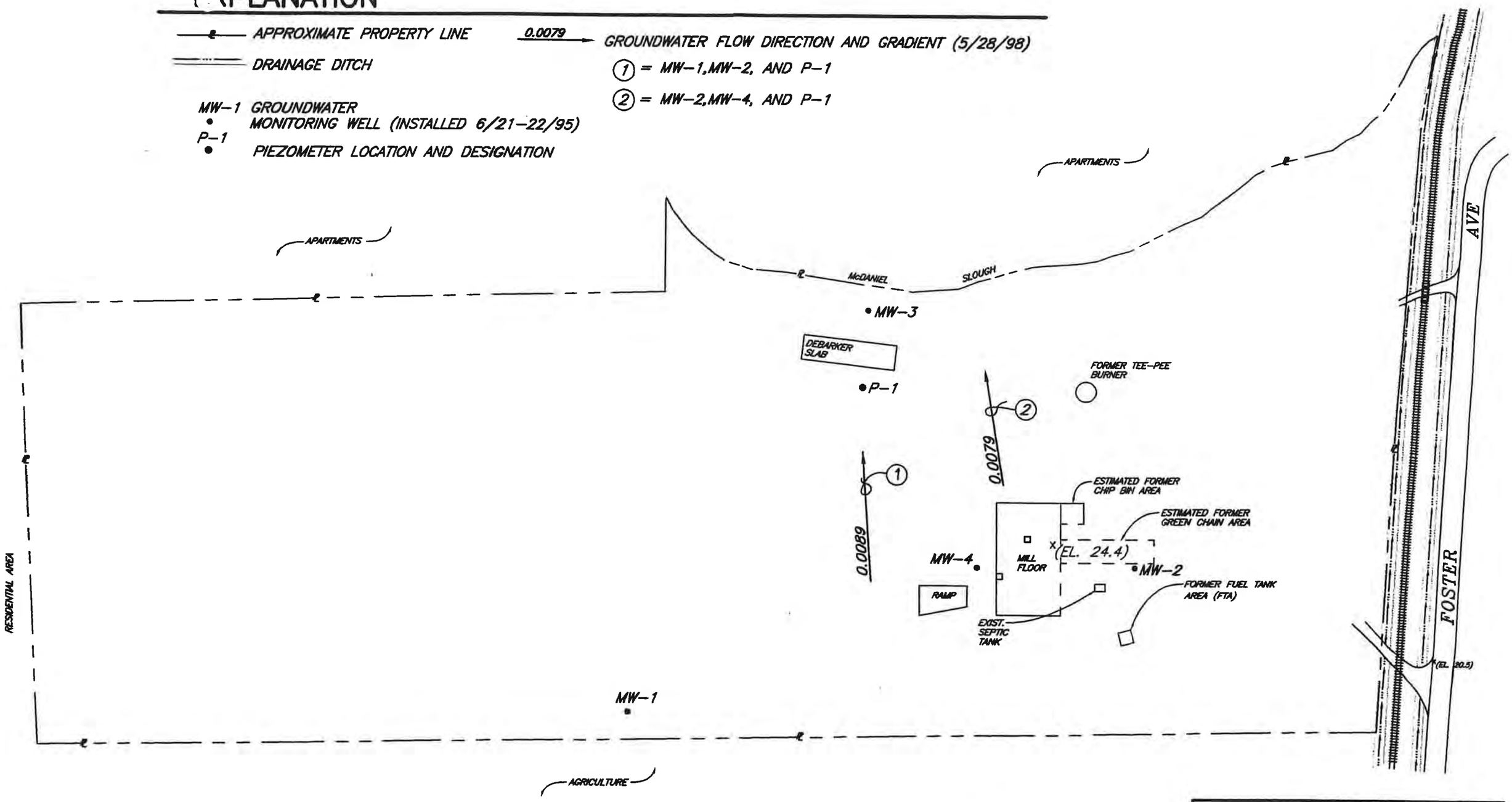
MW–1 GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95)

P–1 PIEZOMETER LOCATION AND DESIGNATION

0.0079 GROUNDWATER FLOW DIRECTION AND GRADIENT (5/28/98)

(1) = MW–1, MW–2, AND P–1

(2) = MW–2, MW–4, AND P–1



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
JUNE, 1998

FIGURE 4

SHN

93...21...

Groundwater samples were collected on May 28, 1998, for all required constituents from wells MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data, including the water quality parameters carbon dioxide [CO_2], oxidation/reduction potential [Eh], dissolved oxygen [DO], electrical conductivity [EC], and pH). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. Table 2 summarizes the second quarter 1998 sample analytical results. See Attachment C for analytical results and chain-of-custody documentation.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)
MW-1	5/28/98	<0.50	<50	<50	<500
MW-2	5/28/98	<0.50	<50	<50	<500
MW-3	5/28/98	<0.50	<50	<50	<500
MW-4	5/28/98	<0.50	<50	<50	<500
QC-1/MW-2	5/28/98	<0.50	<50	<50	<500

QC-1 = Quality Control Sample
--- = not sampled

Groundwater flow in the mill/debarker slab area was toward the southeast, during this quarter. Groundwater analytical results from all wells indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) were below the method reporting limits. Geochemical parameters collected during the May 1998 groundwater monitoring event are summarized in Table 3.

TABLE 3
GEOCHEMICAL PARAMETER MEASUREMENT

WELL#	Date	DCO_2	DO	Eh
MW-1	05/28/98	90	6.8	55
MW-2	05/28/98	100	4.9	148
MW-3	05/28/98	160	5.8	137
MW-4	05/28/98	120	5.3	142

DO concentrations detected in site wells are sufficient to support biodegradation, and Eh measurements indicate that aerobic conditions exist at the site. DCO_2 concentrations are sufficient to indicate that biodegradation may be occurring at the site. The conclusion that biodegradation is occurring is supported by the lack of petroleum hydrocarbon constituents in any of the site wells which are located downgradient of former petroleum hydrocarbon source areas.

To ensure the integrity of analytical results, and as part of the quality assurance and quality control (QA/QC) program, SHN field personnel followed standard operating procedures for quarterly groundwater sampling. A blind sample was collected during this monitoring event. This blind sample (QC-1) was "paired" with a regularly scheduled sample (MW-2), so that laboratory staff did not know which blind sample corresponded to which "regular" sample. There is no inconsistency in the quality control analyses for the constituents analyzed.

REQUEST FOR CESSATION OF GROUNDWATER MONITORING PROGRAM

Results of groundwater sampling conducted to date, especially since June 1997 overexcavation activities, documents no detection, at laboratory method detection levels, of the contaminants of concern.

SHN requests, on behalf of ERS, that the HCDEH formally rescind the monitoring and reporting program for the Specialty Mill site. Historical analytical data for site groundwater monitoring is presented in Attachment D and will serve as documentation for the above request.

Quarterly monitoring and reporting will continue, for the existing monitoring wells and piezometer P-1, including geotechnical parameter measurement and the required analytical suite, pending the HCDEH response to the above request.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
exp 3-31-2002
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:lms
Attachments (A, B, C & D, plus 4 figures)
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

ATTACHMENT A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 June 1998

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Sawmills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the 13 April 1998 quarterly monitoring report prepared by SHN. In our 19 February 1998 letter we requested that groundwater samples be collected and submitted to the laboratory for dissolved oxygen analysis in order to validate the field meter results. This request was made based on anomalous readings presented by SHN in the previous quarterly monitoring report. SHN failed to collect the required samples. This must be performed in the next quarterly event. We appreciate your continued cooperation and attention to this matter. Please call me at 707.441.5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.013/697L

REC'D FEB 23 1998

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

100 H STREET, SUITE 100, EUREKA, CA 95501

(707) 445-6215
FAX (707) 441-5699

19 February 1998

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the 19 December 1997 letter prepared by SHN Consulting Engineers and Geologists (SHN). SHN indicates that you have listed the property for sale for potential residential development. SHN has requested on your behalf written statement concurring that the site is suitable for redevelopment. We understand the Specialty Mill site is proposed as residential development. SHN has indicated that a contingency plan will be submitted similar to that prepared for the Windsong Subdivision and the Aldergrove Industrial Park. The contingency plan should address the proposed site use and associated concerns regarding protection of public health. This contingency plan needs to be submitted in order for our agency to prepare the requested redevelopment letter.

We have also received and reviewed the 30 December 1997 *"Fourth Quarter 1997 groundwater Monitoring Report "* prepared by SHN. We concur with the recommendation in the report. We request that groundwater samples be collected and submitted to the laboratory for dissolved oxygen analysis in order to validate the field meter results. Analysis of water samples from Janes Creek for tannins and lignins may be deleted after the next quarterly sampling event is completed.

Please submit the requested information by 20 March 1998. We would be pleased to meet with you and any prospective buyers to address these concerns. I look forward to receiving the requested information and working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.010/697L

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

7 August 1997

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the quarterly monitoring reports and the 12 June 1997 letter prepared by SHN Consulting Engineers and Geologists (SHN). We have the following comments.

- Analysis for dissolved metals, tannins and lignins may be deleted from the analytical suite.
- Please provide the methodology used to collect dissolved oxygen measurements.
- The laboratory has noted that the water samples containing material in the diesel range of molecular weights does not match the typical peak pattern for diesel fuel. Please submit copies of the chromatograms for review. Considering the site history as a wood mill, it is possible that the material reported as diesel may be biogenic in origin. We recommend that an alumina or silica gel cleanup be performed on all future samples to eliminate biogenic interference. This method should also be applied to soil samples from the biotreatment cells at the Metropolitan Mill.
- A contingency and remedial plan need to be developed for investigation and handling of potentially contaminated soil that may be encountered during site redevelopment.

Please submit the requested information by 30 September 1997. I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

DRD:fd
cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.005/697L

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

100 H STREET, SUITE 100, EUREKA, CA 95501

(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

ATTACHMENT B

FIELD DATA

APPENDIX K

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 1

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 5-28-98 DAY OF WEEK Thursday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Quarterly sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Rainy overcast	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0800. Then I went around and took all water levels de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. Then I purged MW-1, MW-3, MW-4 and MW-2 with a 2" TEFLON bailer in this order. Purge water from these 4 wells was caught in 5 gal buckets then dumped into the 55 gal. drum located on the slab by MW-4. I de-coned the 2" bailer after purging each well by scrubbing it with liquinox then rinsing it with D.I water. I sampled each well with a disposable bailer. QC-1 came out of MW-2.
Left site for NCL at 1625.

Mileage miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

GROUND WATER ELEVATIONS

APPENDIX K

Keys

JOB NO. : 093121.10

CLIENT: Eel River Sawmills

LOCATION: Foster Ave. Arcata, Ca

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	4/29/98 DRP	26.69	3.24	23.45
MW-2		26.04	4.89	21.15
MW-3		24.445	9.15	15.295
MW-4		27.72	6.38	21.34
P-1		28.57	8.65	19.92
MW-1	5/29/98 DRP	26.69	4.36	22.33
MW-2		26.04	4.74	21.30
MW-3		24.445	10.08	14.365
MW-4		27.72	6.63	21.09
P-1		28.57	9.14	19.43

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100
CLIENT Eel River Sawmills
WELL NO. MW-3
TOTAL DEPTH 25.90
DEPTH TO WATER 10.08
HT OF WATER COLUMN 15.82 X (0.16) = CASING VOL 2.53 x 3 = 7.59

DATE 5-28-98
SAMPLER David R. Pawn
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				10.08	1017	0 gal.			
					1022	2.50 gal.	1015	56°	6.73
				Empty	1034	3.50 gal.	1006	56.4°	6.76
	160	5.8	137	Empty	1049 1053	4.25 gal.	972	56.4°	6.89
		No flow thru cell							

TOTAL 4.3 gal.
INITIAL WATER VOLME 2.5 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1515
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS Recharged to 12.53 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100
CLIENT Eel River Sawmills
WELL NO. MW-1
TOTAL DEPTH 14.78
DEPTH TO WATER 4.36
HT OF WATER COLUMN 10.42 X (~~0.66~~ 0.16) = CASING VOL 1.67 x 3 = 5.00

DATE 5-28-98
SAMPLER David R. Paul
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				4.36	0907	0 gal.			
					0909	1.75 gal.	348	56.4°	6.36
					0916	3.50 gal.	354	55.5°	6.36
					0923	5 gal.	353	55.2°	6.34
	90	6.8	55		0930	5.50 gal.			
		No	flow						
		thru	cell						

TOTAL 5.5 gal.
INITIAL WATER VOLME 1.7 gal.

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1000
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS
Recharged to 4.23 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100 DATE 5-28-98
CLIENT Eel River Sawmills SAMPLER David R. Pawley
WELL NO. MW-4 ELEVATION
TOTAL DEPTH 14.54 WATER
DEPTH ELEVATION
TO WATER 6.63
HT OF WATER COLUMN 7.91 X (0.16) = CASING VOL 1.27 x 3 = 3.80

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				6.63	1123	0 gal.			
					1126	1.50 gal.	353	56.2°	6.22
					1134	2.75 gal.	340	56.6°	6.19
					1143	4 gal.	381	56.1°	6.21
	120	5.3	142		1151	4.50 gal.			
		No flow thru cell							

TOTAL 4.5 gal.
INITIAL WATER VOLME 1.3 gal

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1220
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS
Recharged to 6.53 at sampling time

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100 DATE 5-28-98
CLIENT Eel River Sawmills SAMPLER David R. Pawl
WELL NO. MW-2 ELEVATION
TOTAL DEPTH 12.05 WATER
DEPTH ELEVATION
TO WATER 4.74
HT OF WATER COLUMN 7.31 X (0.16) = CASING VOL 1.17 x 3 = 3.51

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
				4.74	1243	0 gal.			
					1245	1.25 gal.	316	59.5°	6.29
					1254	2.50 gal.	318	59.1°	6.54
					1302	3.50 gal.	317	59°	6.70
	100	4.9	148		1311	4.50 gal.	319	59.6°	7.15
		No flow							
		thru cell							

TOTAL 4.5 gal.
INITIAL WATER VOLME 1.2 gal

SAMPLING EQUIPMENT Disposable Bailer + Tri-pod and reel
SAMPLE TIME 1400
SAMPLE ANALYSIS TPHG/BTEX, TPHD/MO
LABORATORY NCL
REMARKS QC-1
Recharged to 4.53 at sampling time

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

P. 1 of ____

LABORATORY NUMBER: ____

Attention: Dennis Scott
Results & Invoice to: E.l River Sawmills Inc.
Address: RT 1 Box 459A
Fortuna Co. 95540
Phone: 725-6911
Copies of Report to: SHN Martin E Lay
812 W. Wabash Ave
Eureka Co 95501

PROJECT INFORMATION

Project Number: 093121100
Project Name: ERS Specialty Mill
Purchase Order Number: ____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	b	
					CONTAINER	9	7
					ANALYSIS	TPH / BTEX	TPH D / Mo
	MW-1	5/28/98	1000	GW	A	X	X
	MW-4	↓	1220	↓	A	X	X
	MW-2	↓	1400	↓	A	X	X
	MW-3	↓	1515	↓	A	X	X
	GC-1	↓	—	↓	A	X	X

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: ____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

[illegible] +TTB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[illegible signature] David R Paim	1133 5/28/98	[illegible]	[illegible]

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand (circled)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

AL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 4-24-98	DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Semi-Overcast	TECHNICIAN David R. Paine	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0905.

Then I took all water levels de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.

Left site at 1000.

Mileage miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	PREPARED BY: David R Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

APPENDIX K

GROUND WATER ELEVATIONS

Keys

JOB NO. : 093121.100

CLIENT: Eel River Sawmills

LOCATION: Foster Ave. Arcata, Ca

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	4/24/98 DRP	26.69	3.24	23.45
MW-2		26.04	4.89	21.15
MW-3		24.445	9.15	15.295
MW-4		27.72	6.38	21.34
P-1		28.57	8.65	19.92

APPENDIX K

DAILY FIELD REPORT

JOB NO 09312.100
PAGE 1 of 2

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 3-27-98 DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Semi-clear	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING		

Arrived on site at 1002. General condition of site is fine, only a couple of irregularities. One the grass around the ramp area by MW-4 not growing as fast as around the fuel tank area and the debarber area. Two the 55 gal. drum that I stored behind the large footing on the slab had been beatened on and tipped over and almost all the water had been dumped out.
Then I removed lids and caps on all 5 wells. Then I took water levels de-coning the sounder after each well by scrubbing it with liquinox the rinsing it with DI water. Then I secured all 5 wells with caps and lids.
Left site at 1115.

Mileage miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY David R. Paine

DAILY FIELD REPORT

GROUND WATER ELEVATIONS

JOB NO.: 093121. 0
CLIENT: Eel River Sawmills
LOCATION: Foster Ave, Arcata CA

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1 (3 3/4")	11-25-97	26.69	8.48	18.21
MW-2 (5 3/4")		26.04	4.88	21.16
MW-3 (2 1/2")		24.44$_5$	14.53	9.915
MW-4 (4 1/4")		27.72	6.90	20.82
P-1 (1 1/2")	↓	28.57	10.01	18.56
MW-1 (3)	12-30-97	26.69	4.22	22.47
MW-2 (5)		26.04	4.88	21.16
MW-3 (2)		24.44$_5$	12.77	11.67$_5$
MW-4 (4)		27.72	6.37	21.35
P-1 (1)	↓	28.57	9.49	19.08
mw-1	1/27/98 DRP	26.69	2.41	24.28
mw-2		26.04	3.43	22.61
mw-3		24.445	9.20	15.245
mw-4		27.72	3.80	23.92
P-1	↓	28.57	5.42	23.15
mw-1	2/26/98 DRP	26.69	2.37	24.32
mw-2		26.04	3.51	22.53
mw-3		24.445	7.20	17.245
mw-4		27.72	4.10	23.62
P-1	↓	28.57	5.96	22.61
mw-1	3/27/98 DRP	26.69	2.35	24.34
mw-2		26.04	3.46	22.58
mw-3		24.445	7.89	16.555
mw-4		27.72	4.25	23.47
P-1	↓	28.57	6.26	22.31

CE Coburn

ATTACHMENT C

ANALYTICAL RESULTS

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9805671

Attention: Dennis Scott
Results & Invoice to: Eel River Sawmills Inc.
Address: RT 1 Box 459A
Fortuna, Ca. 95540
Phone: 725-6911
Copies of Report to: SHN Martin E. Lay
812 W. Wabash Ave.
Eureka, Ca. 95501

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__

PROJECT INFORMATION
Project Number: 093121.110
Project Name: ERS Specialty Mill
Purchase Order Number: _____

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPHG/BTEX	ANALYSIS: TPHD/MO
	MW-1	5/28/98	1000	GW	9	b		
	MW-4		1220					
	MW-2		1400					
	MW-3		1515					
	QC-1	↓	—	↓				
A					7		X	X
A							X	X
A							X	X
A							X	X
A							X	X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Intact/ice +ITB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Pains David R. Pains	1633 5/28/98	Lauren Miller	5/29/98 1635

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

NORTH COAST LABORATORIES LTD.

Date: 06/17/98

REPORT

REPORT TO: Eel River Saw Mill
1053 Northwestern Avenue
Fortuna, CA 95540

Attn: Dennis Scott

WORK ORDER 98-05-671

INVOICE # 60066937

WORK ID: 093121.100/ERS Specialty Mill

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
02	MW-4
02	MW-4
03	MW-2
03	MW-2
04	MW-3
04	MW-3
05	QC-1
05	QC-1
06	Method Blank
07	Lab. Control Sample

Comments:

TPHC Diesel/Motor Oil: A surrogate is not added to the diesel/motor oil samples because the surrogate elutes in the motor oil range.

Previously reported on 06/16/98.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected
NQ = Not Quantifiable
NR = Not Requested

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/09/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Surrogate:						06/09/98	EPA 602
cis-1,2-dichloroethene	80.5	N/A	% Rec	1.0		06/09/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		06/09/98	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 02A COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/09/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Surrogate:						06/09/98	EPA 602
cis-1,2-dichloroethene	83.2	N/A	% Rec	1.0		06/09/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		06/09/98	EPA5030GCFID

APPENDIX K

SAMPLE ID: MW-4 FRAC.: 02B COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 03A COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/09/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Surrogate:						06/09/98	EPA 602
cis-1,2-dichloroethene	62.9	N/A	% Rec	1.0		06/09/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		06/09/98	EPA5030GCFID

SAMPLE ID: MW-2 FRAC.: 03B COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 04A COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/09/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Surrogate:						06/09/98	EPA 602

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
cis-1,2-dichloroethene	83.4	N/A	% Rec	1.0		06/09/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		06/09/98	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 04B COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID

SAMPLE ID: QC-1 FRAC.: 05A COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/09/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/09/98	EPA 602
Surrogate:						06/09/98	EPA 602
cis-1,2-dichloroethene	86.2	N/A	% Rec	1.0		06/09/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		06/09/98	EPA5030GCFID

SAMPLE ID: QC-1 FRAC.: 05B COLLECTED: 05/28/98 RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID

SAMPLE ID: Method Blank FRAC.: 06A COLLECTED: N/A RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/08/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/08/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		06/08/98	EPA 602

Date: 06/17/98
Work Order: 98-05-671
Invoice #: 60066937

REPORT

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Ethylbenzene	ND	0.50	ug/L	1.0		06/08/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/08/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/08/98	EPA 602
Surrogate:						06/08/98	EPA 602
cis-1,2-dichloroethene	107	N/A	% Rec	1.0		06/08/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		06/08/98	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	06/05/98	06/08/98	EPA3510GCFID

SAMPLE ID: Lab. Control Sample FRAC.: 07A COLLECTED: N/A RECEIVED: 05/28/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	99.0	N/A	% Rec	1.0		06/08/98	EPA 602
Benzene	93.5	N/A	% Rec	1.0		06/08/98	EPA 602
Toluene	91.0	N/A	% Rec	1.0		06/08/98	EPA 602
Ethylbenzene	90.5	N/A	% Rec	1.0		06/08/98	EPA 602
m,p Xylene	87.4	N/A	% Rec	1.0		06/08/98	EPA 602
o Xylene	84.3	N/A	% Rec	1.0		06/08/98	EPA 602
Surrogate:						06/08/98	EPA 602
cis-1,2-dichloroethene	105	N/A	% Rec	1.0		06/08/98	EPA 602
TPHC Gasoline/water	90.7	N/A	% Rec	1.0		06/08/98	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	80.6	N/A	% Rec	1.0	06/05/98	06/08/98	EPA3510GCFID
TPHC - Motor Oil	89.5	N/A	% Rec	1.0	06/05/98	06/08/98	EPA3510GCFID

ATTACHMENT D

SUMMARY TABLE OF HISTORICAL GROUNDWATER LEVELS AND ANALYTICAL RESULTS

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-1															
	06/28/95	<0.50	<50	<50	<500	<0.010	0.022	0.052	0.03	<0.020	0.43	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.049	<0.020	0.88	--	--	--	
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.57	--	--	--	--
	08/23/96	<0.50	<50	<50	<500	<0.010	0.032	0.059	0.030	<0.020	0.27	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.97	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.023	<0.020	0.89	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	0.024	0.033	<0.020	0.36	--	9.6	80	200
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	11.2	60	90
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	19.02 [2]	55	29
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.1	60	94
MW-2															
	06/29/95	<0.50	<50	74 [1]	<500	--	--	--	--	0.036	1.1	<50	--	--	--
	02/23/96	<0.50	<50	180 [1]	<500	--	<0.0050	<0.020	<0.020	<0.020	1.1	--	--	--	--
	05/24/96	<0.50	<50	110 [1]	<500	<0.010	<0.0050	<0.020	0.34	<0.020	1.0	--	--	--	
	08/23/96	<0.50	<50	64 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.90	--	--	--	--
	11/22/96	<0.50	<50	300 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.96	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.020	0.074	<0.020	1.3	--	--	--	--
	05/22/97	<0.50	<50	100 [1]	<500	<0.010	<0.010	0.026	0.082	<0.020	1.3	--	6.3	110	105
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.2	100	110
	11/25/97	<0.50	<50	140	<500	--	--	--	--	--	--	--	8.8	90	98
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.7	50	127

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

[2] DO value not realistic, disregard.

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-3															
	06/29/95	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.031	<0.020	4.5	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	5.2	--	--	--	--
	08/23/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.5	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	3.1	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.2	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	<0.020	0.060	<0.020	3.6	--	7.4	200	110
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	10.7	160	30
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.05	165	-27
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	8.2	130	108
MW-4															
	06/29/95	<0.50	<50	<50	<500	<0.010	0.062	0.11	0.061	<0.020	1.7	<50	--	--	--
	12/20/95	--	--	--	--	<0.010	<0.0050	<0.020	0.020	<0.020	--	--	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.17	<0.020	2.1	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	0.38	<0.020	1.7	--	--	--	--
	08/23/96	<0.50	<50	52 [1]	<500	<0.010	0.014	0.034	<0.020	<0.020	1.9	--	--	--	--
	11/22/96	<0.50	<50	88 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	1.3	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.080	<0.020	2.1	--	--	--	--
	05/22/97	<0.50	<50	63 [1]	<500	<0.010	<0.010	0.024	0.060	<0.020	1.3	--	6.7	100	90
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.9	100	110
	11/25/97	<0.50	<50	94	<500	--	--	--	--	--	--	--	8.47	110	48
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.0	70	123

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

APPENDIX K

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIAL MILL, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-1	06/27/95	6.40	20.29
	12/20/95	2.78	23.91
	01/17/96	2.43	24.26
	02/23/96	2.39	24.30
	03/22/96	3.32	23.37
	04/29/96	2.95	23.74
	05/24/96	4.07	22.62
	06/25/96	6.92	19.77
	07/26/96	8.79	17.90
	08/23/96	10.38	16.31
	09/26/96	12.22	14.47
	10/28/96	13.19	13.50
	11/22/96	6.82	19.87
	12/27/96	2.41	24.28
	01/27/97	2.41	24.28
	02/28/97	2.64	24.05
	03/27/97	3.87	22.82
	04/24/97	3.39	23.30
	05/22/97	5.97	20.72
	06/30/97	8.26	18.43
	07/28/97	9.77	16.92
	08/26/97	11.43	15.26
	09/24/97	13.09	13.60
	10/22/97	13.93	12.76
	11/25/97	8.48	18.21
	12/30/97	4.22	22.47
	01/27/98	2.41	24.28
	02/26/98	2.37	24.32
MW-2	06/27/95	6.40	19.64
	12/20/95	3.85	22.19
	01/17/96	3.17	22.87
	02/23/96	3.10	22.94
	03/22/96	4.82	21.22
	04/29/96	4.06	21.98
	05/24/96	4.58	21.46
	06/25/96	7.03	19.01
	07/26/96	8.02	18.02
	08/23/96	8.67	17.37
	09/26/96	9.06	16.98
	10/28/96	7.73	18.31
	11/22/96	4.22	21.82
	12/27/96	3.09	22.95
	01/27/97	3.13	22.91
	02/28/97	3.77	22.27
	03/27/97	5.38	20.66
	04/24/97	4.04	22.00
	05/22/97	6.40	19.64
	06/30/97	7.48	18.56
	07/28/97	8.48	17.56
	08/26/97	8.88	17.16
	09/24/97	8.61	17.43
	10/22/97	8.84	17.20
	11/25/97	4.88	21.16
	12/30/97	4.88	21.16
	01/27/98	3.43	22.61
	02/26/98	3.51	22.53

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIA ' MILL, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-3	06/27/95	11.55	12.90
	12/20/95	14.78	9.67
	01/17/96	10.18	14.27
	02/23/96	8.00	16.45
	03/22/96	8.80	15.65
	04/29/96	9.41	15.04
	05/24/96	10.32	14.13
	06/25/96	12.03	12.42
	07/26/96	14.40	10.05
	08/23/96	16.19	8.26
	09/26/96	16.05	8.40
	10/28/96	15.49	8.96
	11/22/96	14.44	10.01
	12/27/96	9.35	15.10
	01/27/97	7.09	17.36
	02/28/97	8.82	15.63
	03/27/97	9.73	14.72
	04/24/97	10.33	14.11
	05/22/97	11.27	13.18
	06/30/97	13.12	11.33
	07/28/97	15.23	9.22
	08/26/97	16.33	8.12
	09/24/97	15.75	8.70
	10/22/97	15.72	8.73
	11/25/97	14.53	9.92
	12/30/97	12.77	11.68
	01/27/98	9.20	15.25
	02/26/98	7.20	17.25
MW-4	06/27/95	8.06	19.66
	12/20/95	5.11	22.61
	01/17/96	4.02	23.70
	02/23/96	3.76	23.96
	03/22/96	6.20	21.52
	04/29/96	5.15	22.57
	05/24/96	6.09	21.63
	06/25/96	8.56	19.16
	07/26/96	9.45	18.27
	08/23/96	10.01	17.71
	09/26/96	10.67	17.05
	10/28/96	9.34	18.38
	11/22/96	5.90	21.82
	12/27/96	3.72	24.00
	01/27/97	3.80	23.92
	02/28/97	4.96	22.76
	03/27/97	6.91	20.81
	04/24/97	5.41	22.31
	05/22/97	8.05	19.67
	06/30/97	9.11	18.61
	07/28/97	9.85	17.87
	08/26/97	10.37	17.35
	09/24/97	10.24	17.48
	10/22/97	10.54	17.18
	11/25/97	6.90	20.82
	12/30/97	6.37	21.35
	01/27/98	3.80	23.92
	02/26/98	4.10	23.62

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
P-1	06/27/95	10.68	17.89
	12/20/95	10.39	18.18
	01/17/96	5.51	23.06
	02/23/96	4.73	23.84
	03/22/96	8.52	20.05
	04/29/96	7.57	21.00
	05/24/96	9.09	19.48
	06/25/96	10.64	17.93
	07/26/96	11.54	17.03
	08/23/96	12.88	15.69
	09/26/96	DRY	--
	10/28/96	13.34	15.23
	11/22/96	9.03	19.54
	12/27/96	4.14	24.43
	01/27/97	4.00	24.57
	02/28/97	7.25	21.32
	03/27/97	9.19	19.38
	04/24/97	8.09	20.48
	05/22/97	10.09	18.48
	06/30/97	11.26	17.31
	07/28/97	11.98	16.59
	08/26/97	13.56	15.01
	09/24/97	12.71	15.86
	10/22/97	13.21	15.36
	11/25/97	10.01	18.56
	12/30/97	9.49	19.08
	01/27/98	5.42	23.15
	02/26/98	5.96	22.61

697L

CONSULTING ENGINEERS
& GEOLOGISTS

John R. Selvage, P.E.
K. Jeff Nelson, P.E.
Roland S. Johnson, Jr. C.E.G.

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(530) 221-5424
FAX (530) 221-0135

Reference: 930121.100

October 12, 1998

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: THIRD QUARTER 1998 GROUNDWATER MONITORING REPORT FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE (LOP #12518), ARCATA, CALIFORNIA

Dear Mr. Dell'Osso:

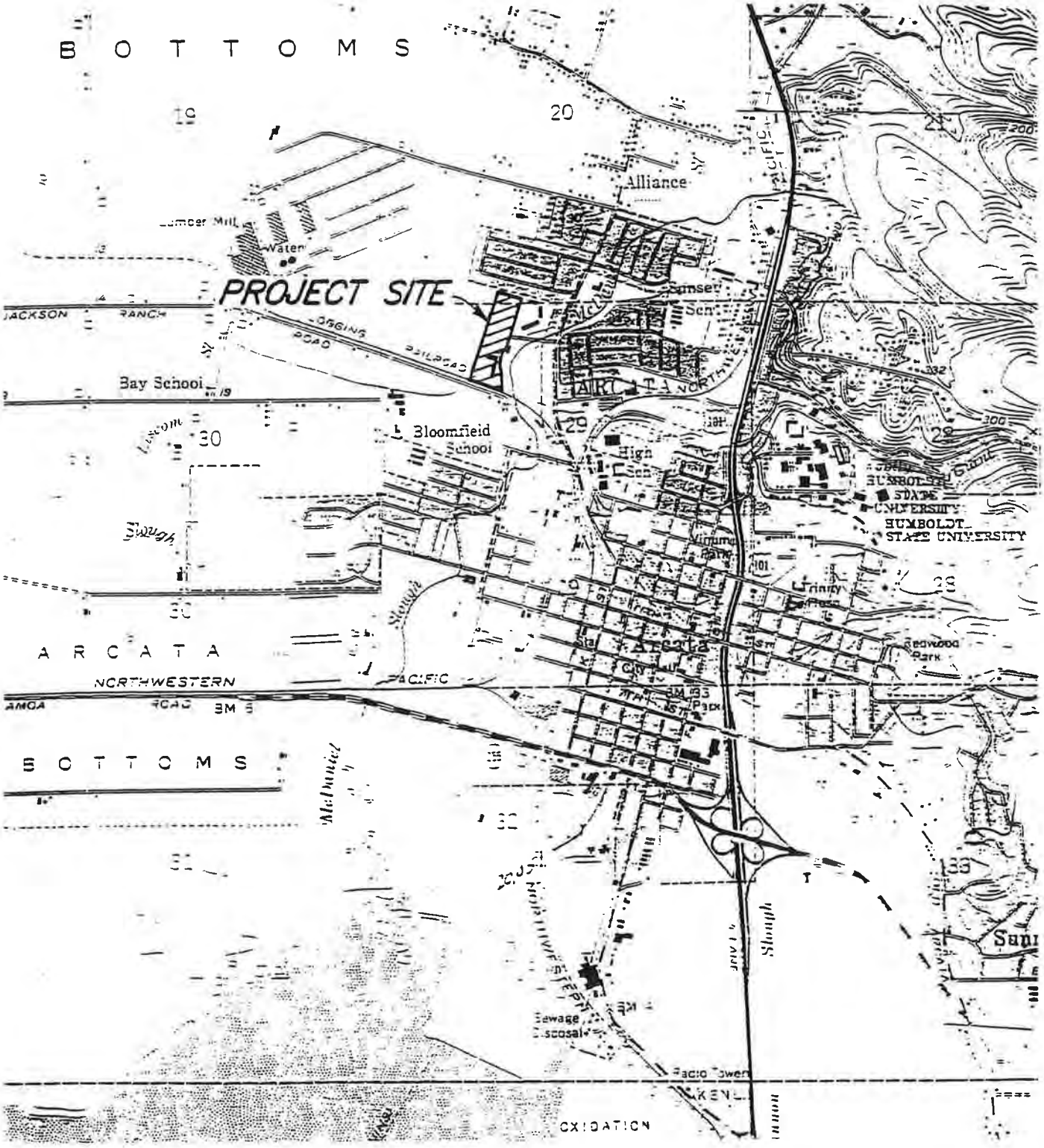
This Third Quarter 1998 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your November 15, 1995, and August 7, 1997 letters to ERS (Attachment A).

The report summarizes groundwater level and sampling data collected during June, July, and August, 1998. Groundwater monitoring well quarterly sampling was conducted in August 1998, for the modified well sampling program (HCDEH letter dated August 7, 1997) deleting dissolved metals, and Tannins and Lignins. Field notes and certified laboratory analytical reports follow in Attachments B and C, respectively.

Additionally, SHN again requests that the HCDEH rescind monitoring and reporting requirements for this site under conditions presented later in this document and in reference to your letter dated August 24, 1998 (Attachment A).

Table 1 (on the following page) is a summary of the groundwater elevations measured in monitoring wells MW-1, MW-2, MW-3, MW-4, and piezometer P-1 during this reporting period.

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Using the data collected, SHN calculated groundwater flow direction and gradient for the months of June, July, and August, 1998. Data collected indicates that site groundwater levels measured decreased during the quarter, and are generally lower than the previous quarter.



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

FIGURE 1

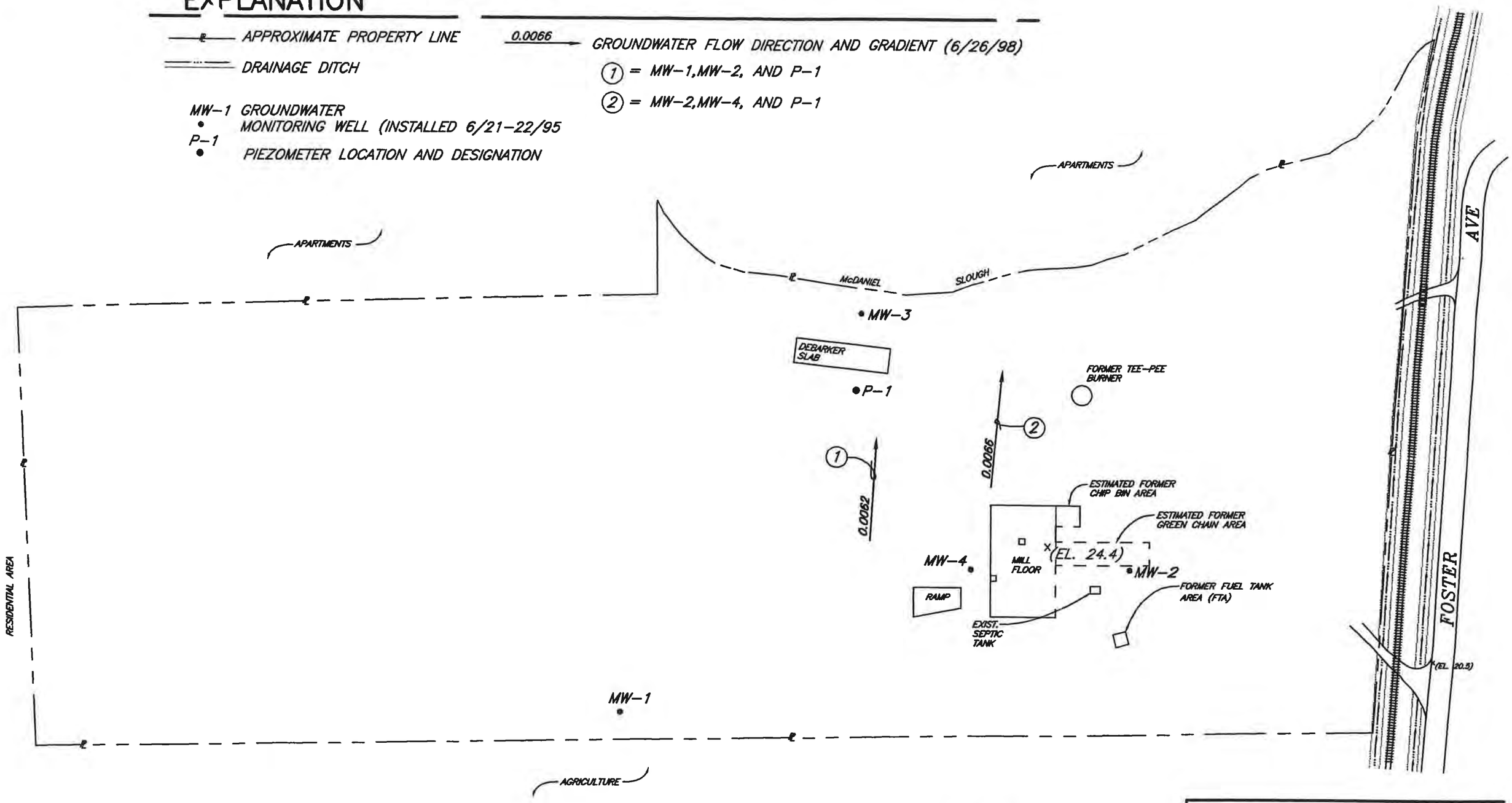
TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	6/26/98	6.33	20.36
MW-2	6/26/98	6.84	19.20
MW-3	6/26/98	11.37	13.07
MW-4	6/26/98	8.41	19.31
P-1	6/26/98	10.43	18.14
MW-1	7/20/98	7.62	19.07
MW-2	7/20/98	7.67	18.37
MW-3	7/20/98	13.07	11.37
MW-4	7/20/98	9.08	18.64
P-1	7/20/98	11.05	17.52
MW-1	8/21/98	9.15	17.54
MW-2	8/21/98	8.47	17.57
MW-3	8/21/98	14.98	9.46
MW-4	8/21/98	9.75	17.97
P-1	8/21/98	11.84	16.73

Site water levels decreased in apparent response to lack of rainfall conditions. The groundwater flow direction and gradient for the months of June, July, and August 1998, are represented by two monitoring well cluster configurations (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figures 2, 3, and 4, respectively. Well cluster MW-1, MW-2, P-1 is representative of the groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area. The calculated groundwater flow direction between last quarter (May) and this quarter (three months) indicates the previously documented flow direction continuing to the east and southeast (well cluster dependent).

EXPLANATION

- ℄ APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- MW–1 GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95
- P–1 PIEZOMETER LOCATION AND DESIGNATION
- 0.0066 → GROUNDWATER FLOW DIRECTION AND GRADIENT (6/26/98)
- (1) = MW–1, MW–2, AND P–1
- (2) = MW–2, MW–4, AND P–1



0 50 100 Feet

SCALE: 1" = 100'

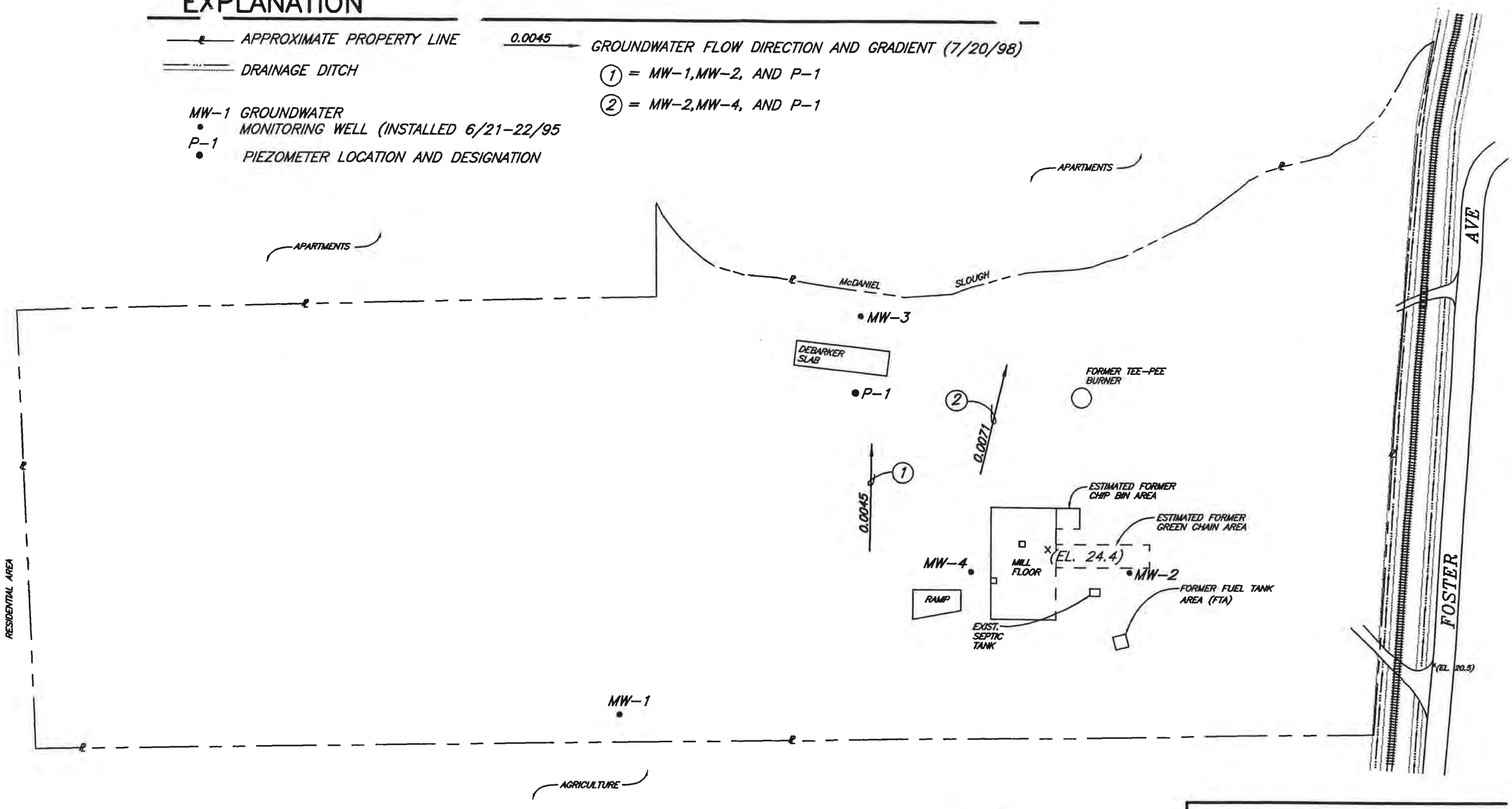
ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
SEPTEMBER, 1998

FIGURE **2**



SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

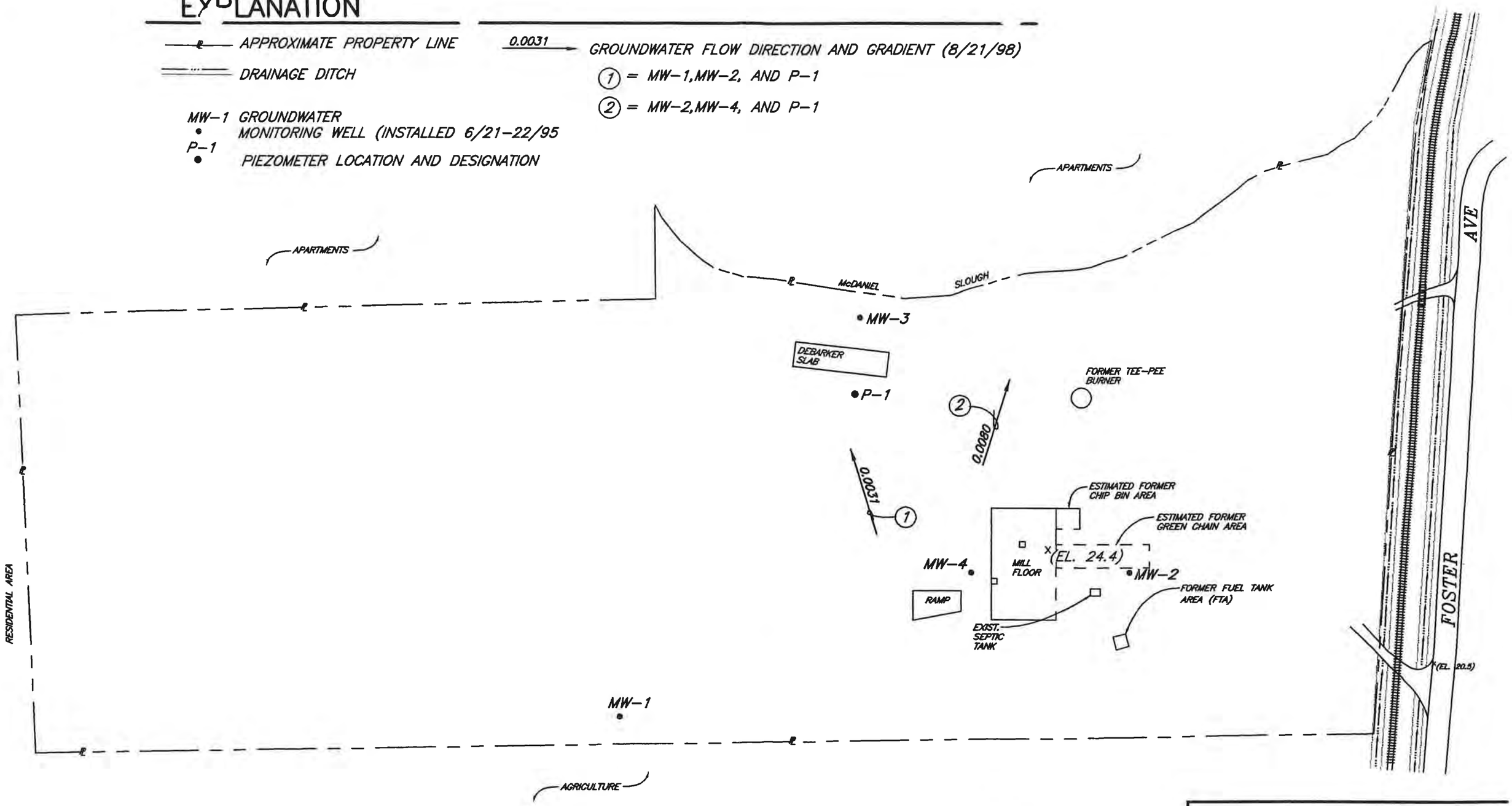
GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
SEPTEMBER, 1998

FIGURE **3**

EXPLANATION

- APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- MW–1 GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95
- P–1 PIEZOMETER LOCATION AND DESIGNATION
- 0.0031 → GROUNDWATER FLOW DIRECTION AND GRADIENT (8/21/98)
- (1) = MW–1, MW–2, AND P–1
- (2) = MW–2, MW–4, AND P–1



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
SEPTEMBER, 1998

FIGURE 4

Groundwater samples were collected on August 21, 1998, for all required constituents from wells MW-1, MW-2, MW-3, and MW-4. All wells were properly purged before samples were collected (see Appendix B for field purge data, including the water quality parameters carbon dioxide [CO_2], oxidation/reduction potential [Eh], dissolved oxygen [DO], electrical conductivity [EC], and pH). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State certified Northcoast Laboratories, LTD., in Arcata, California. Table 2 summarizes the Third quarter 1998 sample analytical results. See Attachment C for analytical results and chain-of-custody documentation.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)
MW-1	08/21/98	<0.50	<50	<50	<500
MW-2	08/21/98	<0.50	<50	<50	<500
MW-3	08/21/98	<0.50	<50	<50	<500
MW-4	08/21/98	<0.50	<50	<50	<500
QC-1	---	---	---	---	---

QC-1 = Quality Control Sample
--- = not sampled

Groundwater flow in the mill/debarker slab area was toward the southeast, during this quarter. Groundwater analytical results from all wells indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) were below the method reporting limits. Geochemical parameters collected during the August 1998 groundwater monitoring event are summarized in Table 3.

TABLE 3
GEOCHEMICAL PARAMETER MEASUREMENT

WELL#	Date	DCO_2	DO	Eh
MW-1	08/21/98	65	9.0	210
MW-2	08/21/98	55	7.7	187
MW-3	08/21/98	150	7.4	153
MW-4	08/21/98	70	6.8	---

CONSULTING ENGINEERS
& GEOLOGISTS

DO concentrations detected in site wells are sufficient to support biodegradation, and Eh measurements indicate that aerobic conditions exist at the site. DCO_2 concentrations are sufficient to indicate that biodegradation may be occurring at the site. The conclusion that biodegradation is occurring is supported by the lack of petroleum hydrocarbon constituents in any of the site wells which are located downgradient of former petroleum hydrocarbon source areas.

REQUEST FOR CESSATION OF GROUNDWATER MONITORING PROGRAM

Results of groundwater sampling conducted to date, especially since February 1998 (Attachment D), documents no detection, at laboratory method detection levels, of the contaminants of concern. Per your August 24, 1998 response to our request (Second Quarter Report, June, 1998) for rescinding well monitoring and sampling, SHN will sample MW-4 only, during a documented high groundwater site condition. All monitoring wells will be gauged to determine groundwater levels and gradient at the time of the sampling of MW-4. If results of the monitoring event indicate non detectable contaminants of concern, SHN will again request cessation of groundwater monitoring at the site.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
Exp 3-31-2000
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:lms
Attachments (A, B, C & D, plus 4 figures)
cc w/attach: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

ATTACHMENT A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

24 August 1998

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Sawmills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the 22 June 1998 *"Second Quarter 1998 Groundwater Monitoring Report"* prepared by SHN Consulting Engineers and Geologists (SHN). SHN requests on your behalf that HCDEH rescind the monitoring program for this site. HCDEH concurs in part with this request. Monitoring shall be reduced to semi-annual during high and low stands of groundwater for contaminants of concern from well MW-4 only. Sampling of all other wells may be discontinued. All appropriate wells should be gauged to determine the groundwater gradient at the site during the semi-annual sampling events. Please call me at 707.441.5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso by CA

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.015/697L

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

7 August 1997

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the quarterly monitoring reports and the 12 June 1997 letter prepared by SHN Consulting Engineers and Geologists (SHN). We have the following comments.

- Analysis for dissolved metals, tannins and lignins may be deleted from the analytical suite.
- Please provide the methodology used to collect dissolved oxygen measurements.
- The laboratory has noted that the water samples containing material in the diesel range of molecular weights does not match the typical peak pattern for diesel fuel. Please submit copies of the chromatograms for review. Considering the site history as a wood mill, it is possible that the material reported as diesel may be biogenic in origin. We recommend that an alumina or silica gel cleanup be performed on all future samples to eliminate biogenic interference. This method should also be applied to soil samples from the biotreatment cells at the Metropolitan Mill.
- A contingency and remedial plan need to be developed for investigation and handling of potentially contaminated soil that may be encountered during site redevelopment.

Please submit the requested information by 30 September 1997. I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

DRD:fd
cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.005/697L

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

ATTACHMENT B

FIELD DATA

DAILY FIELD REPORT

JOB NO 093121.100
PAGE 1 of 3

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 6-26-98 / DAY OF WEEK Friday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Clear	TECHNICIAN David R. Paine
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 0825. Then I went around and took water levels in this order mw-1, P-1, mw-3 mw-4 and mw-2 de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water. The 55 gal. drum stored on slab by mw-4 has been emptied and is now by ramp with no lid on it. Drum also has a hole in it about 1' from bottom.
Left site at 0913.

* Note:
Vegetation around mw-3 the de-barked area is consistent with surrounding vegetation however around mw-4 by the ramp the vegation is sparse and barely even ground cover. Vegetation around fuel tank area by mw-2 has good ground cover but not consistent with surrounding vegetation.

Mileage ____ miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

JOB NO. : 093121.10m
CLIENT: Eel River Sawmills
LOCATION: Foster Ave. Arcata, Ca

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	4/24/98 DRP	26.69	3.24	23.45
MW-2		26.04	4.89	21.15
MW-3		24.445	9.15	15.295
MW-4		27.72	6.38	21.34
P-1		28.57	8.65	19.92
MW-1	5/29/98 DRP	26.69	4.36	22.33
MW-2		26.04	4.74	21.30
MW-3		24.445	10.08	14.365
MW-4		27.72	6.63	21.09
P-1		28.57	9.14	19.43
MW-1	6/26/98 DRP	26.69	6.33	20.36
MW-2		26.04	6.84	19.20
MW-3		24.445	11.37	13.075
MW-4		27.72	8.41	19.31
P-1		28.57	10.43	18.14

SHN

APPENDIX K

EQUIPMENT USAGE

ITEM	DESCRIPTION	1/2 DAY	DAY	WEEK	MONTH
110	WATER LEVEL METER	1			
111	LEVEL D HEALTH & SAFETY	1			
111C	LEVEL C HEALTH & SAFETY				
112	CENTRIFUGAL PUMP				
113	PH/CONDUCTIVITY METER				
116	WELL WIZARD				
118	ROTO HAMMER				
119	DRAGER PUMP				
120	GRUNDFOS CONTROLLER & PUMP				
121	PRESSURE TRANSDUCER				
122	PRESSURE VACUUM PUMP				
123	FID METER				
124	LEL METER				
125	AMAZON PUMP				
126	HIGH PRESSURE CONTROLLER				
127	TRANSFER VESSEL				
128	TURBIDITY METER				
134	DISSOLVED OXYGEN METER				
135	WELL POINT				
136	VAPOR EXTRACTION SYSTEM				
137	FYRITE METER				
138	SOIL/GAS PURGE PUMPS				
139	GENERATOR				
140	SOIL GAS PROBES				
141	PERISTALTIC PUMPS				
146	ORP Probe				
147	CO_2 Meter				

REFERENCE: 093121.100

JOB NAME: ERS Specialty Mill

DATE: 6-26-98

SIGNED: Daniel R. Pains

D/P/T: 11 10 22

HAZARDOUS MATERIAL SUPPLIES

Reference: 093121.100

ITEM	DESC.	QTY	COST	CHG
LATEX GLOVES		2	$ 0.30	.60
NITRILE LINED GLOVES			$ 2.50	
TYVEK COVERALL			$ 8.00	
TYVEK W/FEET/HOOD	LARGE		$ 10.00	
SARANEX COVERALLS	LARGE		$ 22.00	
HOODS--NON-COATED	ONE SIZE		$ 3.00	
DUST & MIST FILTERS	PAIR		$ 2.50	
ORGANIC VAPOR/ACID FILTER	PAIR		$ 12.00	
DISTILLED WATER	GALLON	1	$ 1.50	1.50
METHANOL	GALLON		$ 20.00	
SMALL BRUSHES			$ 2.00	
MEDIUM BRUSHES			$ 6.00	
LARGE BRUSHES			$ 15.00	
DRAEGER TUBES	EACH		$ 5.00	
2.5" BRASS LINERS & CAP	W/2 CAPS		$ 5.00	
DUCT TAPE	ROLL		$ 7.00	
BARRICADE TAPE	ROLL		$ 25.00	
PENS			$ 1.50	
AIR LINE DEVEL. PUMP	PER FOOT		$ 0.50	
55 GALLON DRUMS	17 SERIES		$ 65.00	
PLASTIC	PER FOOT		$ 2.00	
PLASTIC BAGS	BOX		$ 4.00	
DISP BAILERS/SAMP.			$ 10.00	
2" LOCKING CAP			$ 16.70	
4" LOCKING CAP			$ 18.70	
DOLPHIN PADLOCK			$ 3.75	
STAKES			$ 0.50	
SOIL GAS TIP AND SCREEN	EACH		$ 25.00	
TEDLAR BAGS	1 L		$ 14.00	
HAZ LABELS			$ 1.00	
TOTAL (EXPENSE 42)				$ 2.10

DAILY FIELD REPORT

APPENDIX K

JOB NO 093121.100

PAGE 1 of 3

PROJECT NAME ERS	CLIENT/OWNER Eel River Sawmills	DAILY FIELD REPORT SEQUENCE NO 1	
GENERAL LOCATION OF WORK Arcata, Ca.	OWNER/CLIENT REPRESENTATIVE Dennis Scott	DATE 7-20-98	DAY OF WEEK Monday
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK Monthly water levels	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Overcast	TECHNICIAN David R. Paine	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

Arrived on site at 1020. Then I went around and took water levels in this order mw-1 p-1 mw-3 mw-4 and mw-2 de-coning the sounder after each well by scrubbing it with liquinox then rinsing it with DI water.

Left site at 1210.

Mileage miles

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY: David R. Paine

DAILY FIELD REPORT

E:\FORMS\FIELD.RPT

APPENDIX K

JOB NO. : 093121.100
CLIENT: Eel Riv. Sawmills
LOCATION: Foster Ave. Arcata, Ca

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	4/24/98 DRP	26.69	3.24	23.45
MW-2		26.04	4.89	21.15
MW-3		24.445	9.15	15.295
MW-4		27.72	6.38	21.34
P-1		28.57	8.65	19.92
MW-1	5/29/98 DRP	26.69	4.36	22.33
MW-2		26.04	4.74	21.30
MW-3		24.445	10.08	14.365
MW-4		27.72	6.63	21.09
P-1		28.57	9.14	19.43
MW-1	6/26/98 DRP	26.69	6.33	20.36
MW-2		26.04	6.84	19.20
MW-3		24.445	11.37	13.075
MW-4		27.72	8.41	19.31
P-1		28.57	10.43	18.14
MW-1	7/20/98 DRP	26.69	7.62	19.07
MW-2		26.04	7.67	18.37
MW-3		24.445	13.07	11.375
MW-4		27.72	9.08	18.64
P-1		28.57	11.05	17.52

SHN

APPENDIX K

HAZARDOUS MATERIAL SUPPLIES

Reference: 093121.100

ITEM	DESC.	QTY	COST	CHG
LATEX GLOVES		2	$ 0.30	.60
NITRILE LINED GLOVES			$ 2.50	
TYVEK COVERALL			$ 8.00	
TYVEK W/FEET/HOOD	LARGE		$ 10.00	
SARANEX COVERALLS	LARGE		$ 22.00	
HOODS--NON-COATED	ONE SIZE		$ 3.00	
DUST & MIST FILTERS	PAIR		$ 2.50	
ORGANIC VAPOR/ACID FILTER	PAIR		$ 12.00	
DISTILLED WATER	GALLON	1	$ 1.50	1.50
METHANOL	GALLON		$ 20.00	
SMALL BRUSHES			$ 2.00	
MEDIUM BRUSHES			$ 6.00	
LARGE BRUSHES			$ 15.00	
DRAEGER TUBES	EACH		$ 5.00	
2.5" BRASS LINERS & CAP	W/2 CAPS		$ 5.00	
DUCT TAPE	ROLL		$ 7.00	
BARRICADE TAPE	ROLL		$ 25.00	
PENS			$ 1.50	
AIR LINE DEVEL. PUMP	PER FOOT		$ 0.50	
55 GALLON DRUMS	17 SERIES		$ 65.00	
PLASTIC	PER FOOT		$ 2.00	
PLASTIC BAGS	BOX		$ 4.00	
DISP BAILERS/SAMP.			$ 10.00	
2" LOCKING CAP			$ 16.70	
4" LOCKING CAP			$ 18.70	
DOLPHIN PADLOCK			$ 3.75	
STAKES			$ 0.50	
SOIL GAS TIP AND SCREEN	EACH		$ 25.00	
TEDLAR BAGS			$ 14.00	
HAZ LABELS			$ 1.00	
TOTAL (EXPENSE 42)				$ 2.10

APPENDIX K
EQUIPMENT USAGE

ITEM	DESCRIPTION	1/2 DAY	DAY	WEEK	MONTH
110	WATER LEVEL METER				
111	LEVEL D HEALTH & SAFETY				
111C	LEVEL C HEALTH & SAFETY				
112	CENTRIFUGAL PUMP				
113	PH/CONDUCTIVITY METER				
116	WELL WIZARD				
118	ROTO HAMMER				
119	DRAGER PUMP				
120	GRUNDFOS CONTROLLER & PUMP				
121	PRESSURE TRANSDUCER				
122	PRESSURE VACUUM PUMP				
123	FID METER				
124	LEL METER				
125	AMAZON PUMP				
126	HIGH PRESSURE CONTROLLER				
127	TRANSFER VESSEL				
128	TURBIDITY METER				
134	DISSOLVED OXYGEN METER				
135	WELL POINT				
136	VAPOR EXTRACTION SYSTEM				
137	FYRITE METER				
138	SOIL/GAS PURGE PUMPS				
139	GENERATOR				
140	SOIL GAS PROBES				
141	PERISTALTIC PUMPS				
146	ORP Probe				
147	CO_2 Meter				

REFERENCE: 093/21.160

JOB NAME: ERS Specialty Mill

DATE: 7-20-98

SIGNED: David R. Lamm

D/P/T: 11 10 22

APPENDIX K

DAILY FIELD REPORT

JOB NO 93121
PAGE 1 of 1

PROJECT NAME ERS	CLIENT/OWNER Eel River Specialty Mill	DAILY FIELD REPORT SEQUENCE NO —	
GENERAL LOCATION OF WORK Arcata	OWNER/CLIENT REPRESENTATIVE	DATE 8/21/98	DAY OF WEEK Fri
GENERAL CONTRACTOR	GRADING CONTRACTOR	PROJECT ENGINEER Marty Lay	
TYPE OF WORK GW Sampling	GRADING CONTRACTOR, SUPERINTENDENT, OR FOREMAN	SUPERVISOR	
SOURCE & DESCRIPTION OF FILL MATERIAL	WEATHER Sunny	TECHNICIAN DEO	
	KEY PERSONS CONTACTED (Civil Engr, Architect, Developer, etc)		
DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING			

730 Mobe equipment, etc. Go to NCL for replacement NaOH solution for DCO_2 kit.

900 Onsite. Open all wells. Take WLs. Purge and sample MW-1, MW-2, MW-4, MW-3 in order using disposable bailer. See data sheets for details. Put graphite in all locks.

1315 Deliver samples to NCL.

1400 Return to office. Paperwork.

SHN	SHN CONSULTING ENGINEERS & GEOLOGISTS (707) 441-8855 812 W. Wabash, EUREKA, CA 95501	COPY GIVEN TO:	REPORTED BY:

DAILY FIELD REPORT

APPENDIX K

JOB NO. : 093121.100

CLIENT: Eel R. ~ Sawmills

LOCATION: Foster Ave. Arcata, Ca

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-1	4/24/98 DRP	26.69	3.24	23.45
MW-2		26.04	4.89	21.15
MW-3		24.445	9.15	15.295
MW-4		27.72	6.38	21.34
P-1		28.57	8.65	19.92
MW-1	5/29/98 DRP	26.69	4.36	22.33
MW-2		26.04	4.74	21.30
MW-3		24.445	10.08	14.365
MW-4		27.72	6.63	21.09
P-1		28.57	9.14	19.43
MW-1	6/26/98 DRP	26.69	6.33	20.36
MW-2		26.04	6.84	19.20
MW-3		24.445	11.37	13.075
MW-4		27.72	8.41	19.31
P-1		28.57	10.43	18.14
MW-1	7/20/98 DRP	26.69	7.62	19.07
MW-2		26.04	7.67	18.37
MW-3		24.445	13.07	11.375
MW-4		27.72	9.08	18.64
P-1		28.57	11.05	17.52
MW-1	8/21/98 DRP	26.69	9.15	17.54
MW-2		26.04	8.47	17.57
MW-3		24.445	14.98	9.465
MW-4		27.72	9.75	17.97
P-1		28.57	11.84	16.73

SHN

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 93121
CLIENT ERS
WELL NO. MW-4
TOTAL DEPTH 14.45
DEPTH TO WATER 9.75
HT OF WATER COLUMN 4.7 X (~~0.66~~ 0.16) = CASING VOL .8

DATE 8/21/98
SAMPLER [illegible]
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
							427	66.5	5.89
							421	65.5	5.83
							421	64.0	5.93
	70	6.8							

TOTAL
INITIAL WATER VOLME

SAMPLING EQUIPMENT disposable bailer
SAMPLE TIME 1200
SAMPLE ANALYSIS GRBTEX D/MO
LABORATORY NCL
REMARKS

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 93121
CLIENT ERS
WELL NO. MW-1
TOTAL DEPTH 14.65
DEPTH TO WATER 9.15
HT OF WATER COLUMN 5.5 X (0.~~20~~ 16) = CASING VOL .9

DATE 8/21/98
SAMPLER DEO
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
							350	60.8	6.20
							322	59.4	6.18
							313	59.2	6.23
							312	59.0	6.23
	65	9.0	210						

TOTAL
INITIAL WATER VOLME

SAMPLING EQUIPMENT Disposable bailer
SAMPLE TIME 1000
SAMPLE ANALYSIS G/BTEX D/MO
LABORATORY NCL
REMARKS

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 93121
CLIENT ERS
WELL NO. MW-2
TOTAL DEPTH 11.95
DEPTH TO WATER 8.47
HT OF WATER COLUMN 3.48 X (0.~~86~~ .16) = CASING VOL .6

DATE 8/21/98
SAMPLER (TO)
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
							348	67.0	6.08
							335	66.2	6.10
							330	65.8	6.05
	55	7.7	~~38~~ 187						

TOTAL
INITIAL WATER VOLME

SAMPLING EQUIPMENT disposable bailer
SAMPLE TIME 1100
SAMPLE ANALYSIS ~~GRTEX~~ DRO
LABORATORY NCL
REMARKS

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 93121
CLIENT ERS
WELL NO. MW-3
TOTAL DEPTH 25.8
DEPTH TO WATER 14.98
HT OF WATER COLUMN 10.82 X (0.16) = CASING VOL 1.7

DATE 8/21/98
SAMPLER (T)
ELEVATION
WATER ELEVATION

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
							932	64.6	6.55
							856	61.6	6.51
							849	61.1	6.54
	150	7.4	153						

TOTAL
INITIAL WATER VOLME

SAMPLING EQUIPMENT disposable bailer
SAMPLE TIME 1300
SAMPLE ANALYSIS GASTEX DRO
LABORATORY NCL
REMARKS

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Lo
Results & Invoice to: SHN
Address: 812 W Wabash
Eureka CA 95501
Phone: 441-3727
Copies of Report to:

PROJECT INFORMATION
Project Number: 2321
Project Name: E
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS
	MW-1	8/13/98	1200	W			
	MW-2		1120				
	MW-4		1230				
	MW-3		1300				

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
3wA

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
	8/14/98 1310		8/17/98 1310

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX K

ATTACHMENT C

ANALYTICAL RESULTS

APPENDIX K

REC SEP 08 1998

NORTH COAST LABORATORIES LTD.

Date: 09/04/98

REPORT

REPORT TO: Selvage, Heber and Nelson
812 West Wabash Avenue
Eureka, CA 95501

WORK ORDER 98-08-482

INVOICE # 60068782

Attn: Marty Lay

WORK ID: 93121/Eel River Specialty

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	MW-1
01	MW-1
02	MW-2
02	MW-2
03	MW-3
03	MW-3
04	MW-4
04	MW-4
05	Method Blank
06	Lab. Control Sample

Comments:

TPHC Diesel/Motor Oil: A surrogate is not added to the diesel/motor oil samples because the surrogate elutes in the motor oil range.

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected
NQ = Not Quantifiable
NR = Not Requested

APPENDIX K

SAMPLE ID: MW-1 FRAC.: 01A COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/28/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Surrogate:						08/28/98	EPA 602
cis-1,2-dichloroethene	89.7	N/A	% Rec	1.0		08/28/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/28/98	EPA5030GCFID

SAMPLE ID: MW-1 FRAC.: 01B COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID

SAMPLE ID: MW-2 FRAC.: 02A COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/28/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Surrogate:						08/28/98	EPA 602
cis-1,2-dichloroethene	87.6	N/A	% Rec	1.0		08/28/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/28/98	EPA5030GCFID

APPENDIX K

SAMPLE ID: MW-2 FRAC.: 02B COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID

SAMPLE ID: MW-3 FRAC.: 03A COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/28/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Surrogate:						08/28/98	EPA 602
cis-1,2-dichloroethene	75.5	N/A	% Rec	1.0		08/28/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/28/98	EPA5030GCFID

SAMPLE ID: MW-3 FRAC.: 03B COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID

SAMPLE ID: MW-4 FRAC.: 04A COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/28/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Surrogate:						08/28/98	EPA 602

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
cis-1,2-dichloroethene	89.4	N/A	% Rec	1.0		08/28/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/28/98	EPA5030GCFID

SAMPLE ID: MW-4 FRAC.: 04B COLLECTED: 08/21/98 RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/26/98	08/28/98	EPA3510GCFID

SAMPLE ID: Method Blank FRAC.: 05A COLLECTED: N/A RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		08/28/98	EPA 602
Benzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Toluene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
o Xylene	ND	0.50	ug/L	1.0		08/28/98	EPA 602
Surrogate:						08/28/98	EPA 602
cis-1,2-dichloroethene	70.2	N/A	% Rec	1.0		08/28/98	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		08/28/98	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	08/26/98	08/27/98	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	08/26/98	08/27/98	EPA3510GCFID

SAMPLE ID: Lab. Control Sample FRAC.: 06A COLLECTED: N/A RECEIVED: 08/21/98

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	90.8	N/A	% Rec	1.0		08/28/98	EPA 602
Benzene	99.9	N/A	% Rec	1.0		08/28/98	EPA 602
Toluene	106	N/A	% Rec	1.0		08/28/98	EPA 602
Ethylbenzene	96.5	N/A	% Rec	1.0		08/28/98	EPA 602
m,p Xylene	100	N/A	% Rec	1.0		08/28/98	EPA 602
o Xylene	91.3	N/A	% Rec	1.0		08/28/98	EPA 602
Surrogate:						08/28/98	EPA 602
cis-1,2-dichloroethene	83.0	N/A	% Rec	1.0		08/28/98	EPA 602

APPENDIX K

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Gasoline/water	88.4	N/A	% Rec	1.0		08/28/98	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	63.6	N/A	% Rec	1.0	08/26/98	08/27/98	EPA3510GCFID
TPHC - Motor Oil	83.0	N/A	% Rec	1.0	08/26/98	08/27/98	EPA3510GCFID

P. 1 of 1

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9808482

Attention: Marty Kay
Results & Invoice to: SHN
Address: 812 W Wabash
Eureka CA 95501
Phone: 441 8877
Copies of Report to:

PROJECT INFORMATION

Project Number: 93121
Project Name: Eel River Sawmills [illegible]
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS: Gas BTEX MTBE	ANALYSIS: Diesel/MO	SAMPLE CONDITION/SPECIAL INSTRUCTIONS
	MW-1	8/21/98	1000	W	X	X	3 VOA
	MW-2	↓	1100	↓	X	X	↓
	MW-4	↓	1200	↓	X	X	↓
	MW-3	↓	1300	↓	X	X	↓

PRESERVATIVE / CONTAINER: (blank)

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
[illegible signature]	8/21/98 1310	[illegible signature]	8/21/98 1310

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

ATTACHMENT D

SUMMARY TABLE OF HISTORICAL GROUNDWATER LEVELS AND ANALYTICAL RESULTS

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-1															
	06/28/95	<0.50	<50	<50	<500	<0.010	0.022	0.052	0.03	<0.020	0.43	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.049	<0.020	0.88	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.57	--	--	--	
	08/23/96	<0.50	<50	<50	<500	<0.010	0.032	0.059	0.030	<0.020	0.27	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.97	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.023	<0.020	0.89	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	0.024	0.033	<0.020	0.36	--	9.6	80	200
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	11.2	60	90
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	19.02 [2]	55	29
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.1	60	94
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.8	90	55
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.0	65	210
MW-2															
	06/29/95	<0.50	<50	74 [1]	<500	--	--	--	--	0.036	1.1	<50	--	--	--
	02/23/96	<0.50	<50	180 [1]	<500	--	<0.0050	<0.020	<0.020	<0.020	1.1	--	--	--	--
	05/24/96	<0.50	<50	110 [1]	<500	<0.010	<0.0050	<0.020	0.34	<0.020	1.0	--	--	--	--
	08/23/96	<0.50	<50	64 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.90	--	--	--	
	11/22/96	<0.50	<50	300 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.96	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.020	0.074	<0.020	1.3	--	--	--	--
	05/22/97	<0.50	<50	100 [1]	<500	<0.010	<0.010	0.026	0.082	<0.020	1.3	--	6.3	110	105
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.2	100	110
	11/25/97	<0.50	<50	140	<500	--	--	--	--	--	--	--	8.8	90	98
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.7	50	127
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	4.9	100	148
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.7	55	187

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

[2] DO value not realistic, disregard.

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-3															
	06/29/95	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.031	<0.020	4.5	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	5.2	--	--	--	
	08/23/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.5	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	3.1	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.2	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	<0.020	0.060	<0.020	3.6	--	7.4	200	110
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	10.7	160	30
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.05	165	-27
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	8.2	130	108
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.8	160	137
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.4	150	153
MW-4															
	06/29/95	<0.50	<50	<50	<500	<0.010	0.062	0.11	0.061	<0.020	1.7	<50	--	--	--
	12/20/95	--	--	--	--	<0.010	<0.0050	<0.020	0.020	<0.020	--	--	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.17	<0.020	2.1	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	0.38	<0.020	1.7	--	--	--	
	08/23/96	<0.50	<50	52 [1]	<500	<0.010	0.014	0.034	<0.020	<0.020	1.9	--	--	--	--
	11/22/96	<0.50	<50	88 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	1.3	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.080	<0.020	2.1	--	--	--	--
	05/22/97	<0.50	<50	63 [1]	<500	<0.010	<0.010	0.024	0.060	<0.020	1.3	--	6.7	100	90
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.9	100	110
	11/25/97	<0.50	<50	94	<500	--	--	--	--	--	--	--	8.47	110	48
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.0	70	123
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.3	120	142
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.8	70	--

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil.
All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

APPENDIX K

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY ...L, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-1	06/27/95	6.40	20.29
	12/20/95	2.78	23.91
	01/17/96	2.43	24.26
	02/23/96	2.39	24.30
	03/22/96	3.32	23.37
	04/29/96	2.95	23.74
	05/24/96	4.07	22.62
	06/25/96	6.92	19.77
	07/26/96	8.79	17.90
	08/23/96	10.38	16.31
	09/26/96	12.22	14.47
	10/28/96	13.19	13.50
	11/22/96	6.82	19.87
	12/27/96	2.41	24.28
	01/27/97	2.41	24.28
	02/28/97	2.64	24.05
	03/27/97	3.87	22.82
	04/24/97	3.39	23.30
	05/22/97	5.97	20.72
	06/30/97	8.26	18.43
	07/28/97	9.77	16.92
	08/26/97	11.43	15.26
	09/24/97	13.09	13.60
	10/22/97	13.93	12.76
	11/25/97	8.48	18.21
	12/30/97	4.22	22.47
	01/27/98	2.41	24.28
	02/26/98	2.37	24.32
	03/27/98	2.35	24.34
	04/24/98	3.24	23.45
	05/28/98	4.36	22.33
	06/26/98	6.33	20.36
	07/20/98	7.62	19.07
	08/21/98	9.15	17.54
MW-2	06/27/95	6.40	19.64
	12/20/95	3.85	22.19
	01/17/96	3.17	22.87
	02/23/96	3.10	22.94
	03/22/96	4.82	21.22
	04/29/96	4.06	21.98
	05/24/96	4.58	21.46
	06/25/96	7.03	19.01
	07/26/96	8.02	18.02
	08/23/96	8.67	17.37
	09/26/96	9.06	16.98
	10/28/96	7.73	18.31
	11/22/96	4.22	21.82
	12/27/96	3.09	22.95
	01/27/97	3.13	22.91
	02/28/97	3.77	22.27
	03/27/97	5.38	20.66
	04/24/97	4.04	22.00
	05/22/97	6.40	19.64
	06/30/97	7.48	18.56
	07/28/97	8.48	17.56
	08/26/97	8.88	17.16
	09/24/97	8.61	17.43
	10/22/97	8.84	17.20
	11/25/97	4.88	21.16
	12/30/97	4.88	21.16
	01/27/98	3.43	22.61
	02/26/98	3.51	22.53
	03/27/98	3.46	22.58
	04/24/98	4.89	21.15
	05/28/98	4.74	21.30
	06/26/98	6.84	19.20
	07/20/98	7.67	18.37
	08/21/98	8.47	17.57

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY L, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-3	06/27/95	11.55	12.90
	12/20/95	14.78	9.67
	01/17/96	10.18	14.27
	02/23/96	8.00	16.45
	03/22/96	8.80	15.65
	04/29/96	9.41	15.04
	05/24/96	10.32	14.13
	06/25/96	12.03	12.42
	07/26/96	14.40	10.05
	08/23/96	16.19	8.26
	09/26/96	16.05	8.40
	10/28/96	15.49	8.96
	11/22/96	14.44	10.01
	12/27/96	9.35	15.10
	01/27/97	7.09	17.36
	02/28/97	8.82	15.63
	03/27/97	9.73	14.72
	04/24/97	10.33	14.11
	05/22/97	11.27	13.18
	06/30/97	13.12	11.33
	07/28/97	15.23	9.22
	08/26/97	16.33	8.12
	09/24/97	15.75	8.70
	10/22/97	15.72	8.73
	11/25/97	14.53	9.92
	12/30/97	12.77	11.68
	01/27/98	9.20	15.25
	02/26/98	7.20	17.25
	03/27/98	7.89	16.56
	04/24/98	9.15	15.30
	05/28/98	10.08	14.37
	06/26/98	11.37	13.08
	07/20/98	13.07	11.38
	08/21/98	14.98	9.47
MW-4	06/27/95	8.06	19.66
	12/20/95	5.11	22.61
	01/17/96	4.02	23.70
	02/23/96	3.76	23.96
	03/22/96	6.20	21.52
	04/29/96	5.15	22.57
	05/24/96	6.09	21.63
	06/25/96	8.56	19.16
	07/26/96	9.45	18.27
	08/23/96	10.01	17.71
	09/26/96	10.67	17.05
	10/28/96	9.34	18.38
	11/22/96	5.90	21.82
	12/27/96	3.72	24.00
	01/27/97	3.80	23.92
	02/28/97	4.96	22.76
	03/27/97	6.91	20.81
	04/24/97	5.41	22.31
	05/22/97	8.05	19.67
	06/30/97	9.11	18.61
	07/28/97	9.85	17.87
	08/26/97	10.37	17.35
	09/24/97	10.24	17.48
	10/22/97	10.54	17.18
	11/25/97	6.90	20.82
	12/30/97	6.37	21.35
	01/27/98	3.80	23.92
	02/26/98	4.10	23.62
	03/27/98	4.25	23.47
	04/24/98	6.38	21.34
	05/28/98	6.63	21.09
	06/26/98	8.41	19.31
	07/20/98	9.08	18.64
	08/21/98	9.75	17.97

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY .L, LOP # 12518

SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
P-1	06/27/95	10.68	17.89
	12/20/95	10.39	18.18
	01/17/96	5.51	23.06
	02/23/96	4.73	23.84
	03/22/96	8.52	20.05
	04/29/96	7.57	21.00
	05/24/96	9.09	19.48
	06/25/96	10.64	17.93
	07/26/96	11.54	17.03
	08/23/96	12.88	15.69
	09/26/96	DRY	--
	10/28/96	13.34	15.23
	11/22/96	9.03	19.54
	12/27/96	4.14	24.43
	01/27/97	4.00	24.57
	02/28/97	7.25	21.32
	03/27/97	9.19	19.38
	04/24/97	8.09	20.48
	05/22/97	10.09	18.48
	06/30/97	11.26	17.31
	07/28/97	11.98	16.59
	08/26/97	13.56	15.01
	09/24/97	12.71	15.86
	10/22/97	13.21	15.36
	11/25/97	10.01	18.56
	12/30/97	9.49	19.08
	01/27/98	5.42	23.15
	02/26/98	5.96	22.61
	03/27/98	6.26	22.31
	04/24/98	8.65	19.92
	05/28/98	9.14	19.43
	06/26/98	10.43	18.14
	07/20/98	11.05	17.52
	08/21/98	11.84	16.73

APPENDIX K

CONSULTING ENGINEERS
& GEOLOGISTS

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812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(530) 221-5424
FAX (530) 221-0135

Reference: 930121.100

January 9, 1999

Dale Dell'Osso
Humboldt County Department Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: WINTER 1998 GROUNDWATER MONITORING REPORT AND REQUEST FOR CLOSURE FOR THE EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE, (LOP #12518), ARCATA, CALIFORNIA

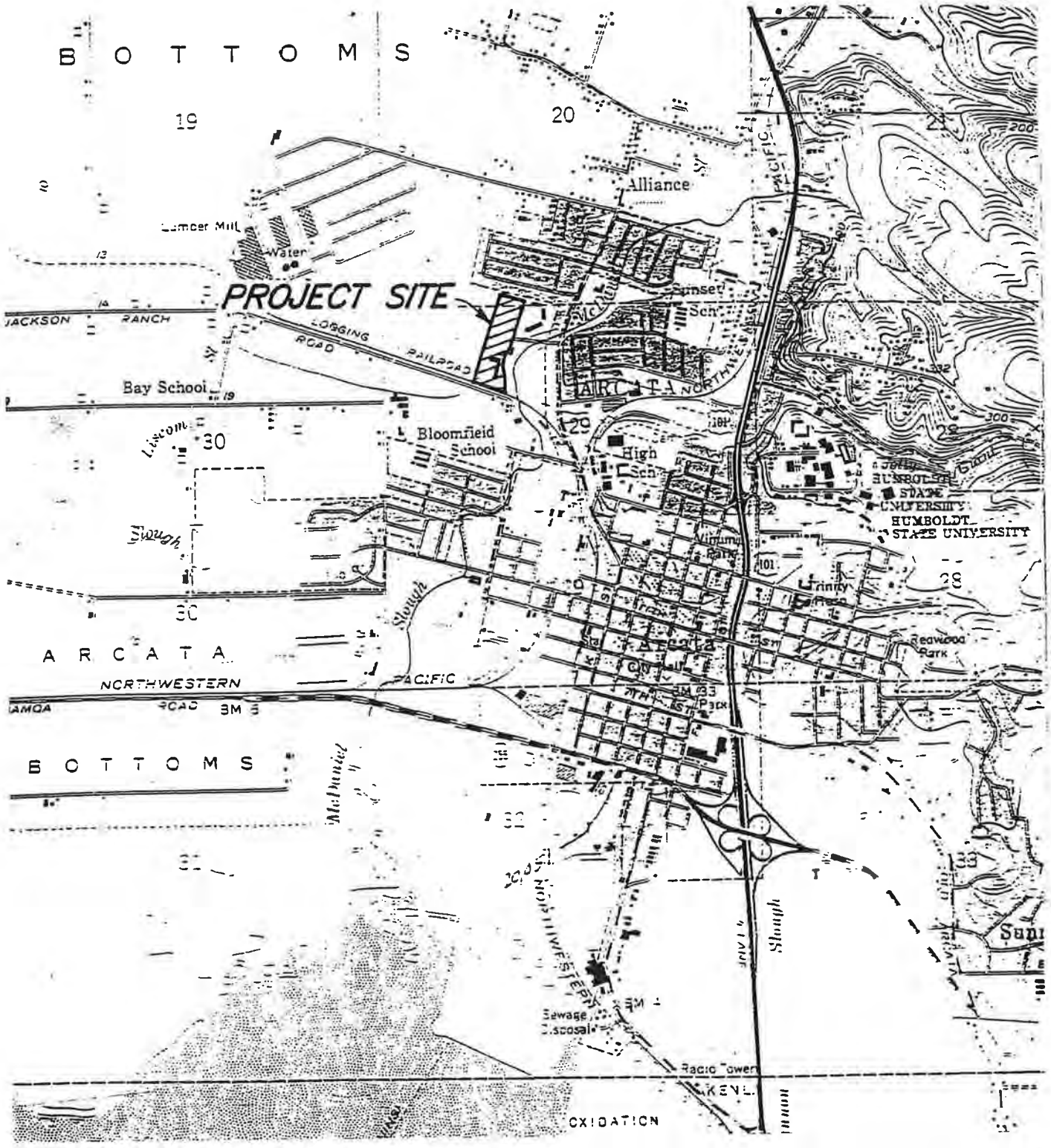
Dear Mr. Dell'Osso:

This winter 1998 monitoring report is being submitted to the Humboldt County Department of Environmental Health (HCDEH) on the behalf of, and with the approval of Eel River Sawmills, Inc. (ERS), for the subject project site (see Figure 1). The report is presented in conformance with the monitoring schedule outlined in your August 24, 1998 letter to ERS (Attachment A).

The report summarizes groundwater gauging and sampling data collected in December 1998, during high water-level conditions, which existed as a result of above average rainfall. Groundwater monitoring well MW-4 sampling was conducted as directed in the modified well sampling program (HCDEH letter dated August 7, 1997) deleting dissolved metals, and Tannins and Lignins. Field notes and certified laboratory analytical reports follow in Attachments B and C, respectively.

Table 1 (on the following page) is a summary of the groundwater elevations measured in monitoring wells MW-1, MW-2, MW-3, MW-4, and piezometer P-1 for this reporting period.

Monitoring well MW-3 represents a deeper aquifer than the other monitoring wells, so is excluded from groundwater gradient calculations. Using the data collected, SHN calculated groundwater flow direction and gradient for the month of December 1998. Data collected indicates that site groundwater-levels increased during the quarter, and are higher than the previous reporting period (June, July, August 1998).



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

N

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

FIGURE 1

TABLE 1
GROUNDWATER ELEVATIONS

WELL NO.	DATE	DEPTH TO GROUNDWATER (FT)	ELEVATION (MSL)
MW-1	12/01/98	2.42	24.27
MW-2	12/01/98	3.33	22.71
MW-3	12/01/98	10.71	13.735
MW-4	12/01/98	3.80	23.92
P-1	12/01/98	4.55	24.02

Site groundwater-levels increased in apparent response to above average rainfall conditions. The groundwater flow direction and gradient for the month of December 1998, are represented by two monitoring well cluster configurations (well clusters MW-1, MW-2, P-1; and MW-2, MW-4, P-1), as indicated on Figure 2. Well cluster MW-1, MW-2, P-1 is representative of the groundwater flow regime for the entire southern half of the property, while cluster MW-2, MW-4, P-1 represents the groundwater flow regime in the mill/debarker slab area. The calculated groundwater flow direction between last quarter (August) and this period indicates the previously documented seasonal flow direction change to the southwest and south-southeast (well cluster dependent). This condition is indicative of the previously documented groundwater mounding following significant rainfall events.

Groundwater samples were collected on December 1, 1998, for all required constituents from well MW-4. The well was properly purged before samples were collected (see Appendix B for field purge data, including the water quality parameters carbon dioxide [CO_2], oxidation/reduction potential [Eh], dissolved oxygen [DO], electrical conductivity [EC], and pH). Groundwater samples were collected using disposable polyethylene bailers and placed in laboratory supplied containers. The samples were placed in an iced cooler for transport, under chain-of-custody documentation, to State-certified Alpha Analytical Laboratories, Inc., in Ukiah, California. Table 2 summarizes the winter 1998 sample analytical results. See Attachment C for analytical results and chain-of-custody documentation.

E :PLANATION

APPROXIMATE PROPERTY LINE

DRAINAGE DITCH

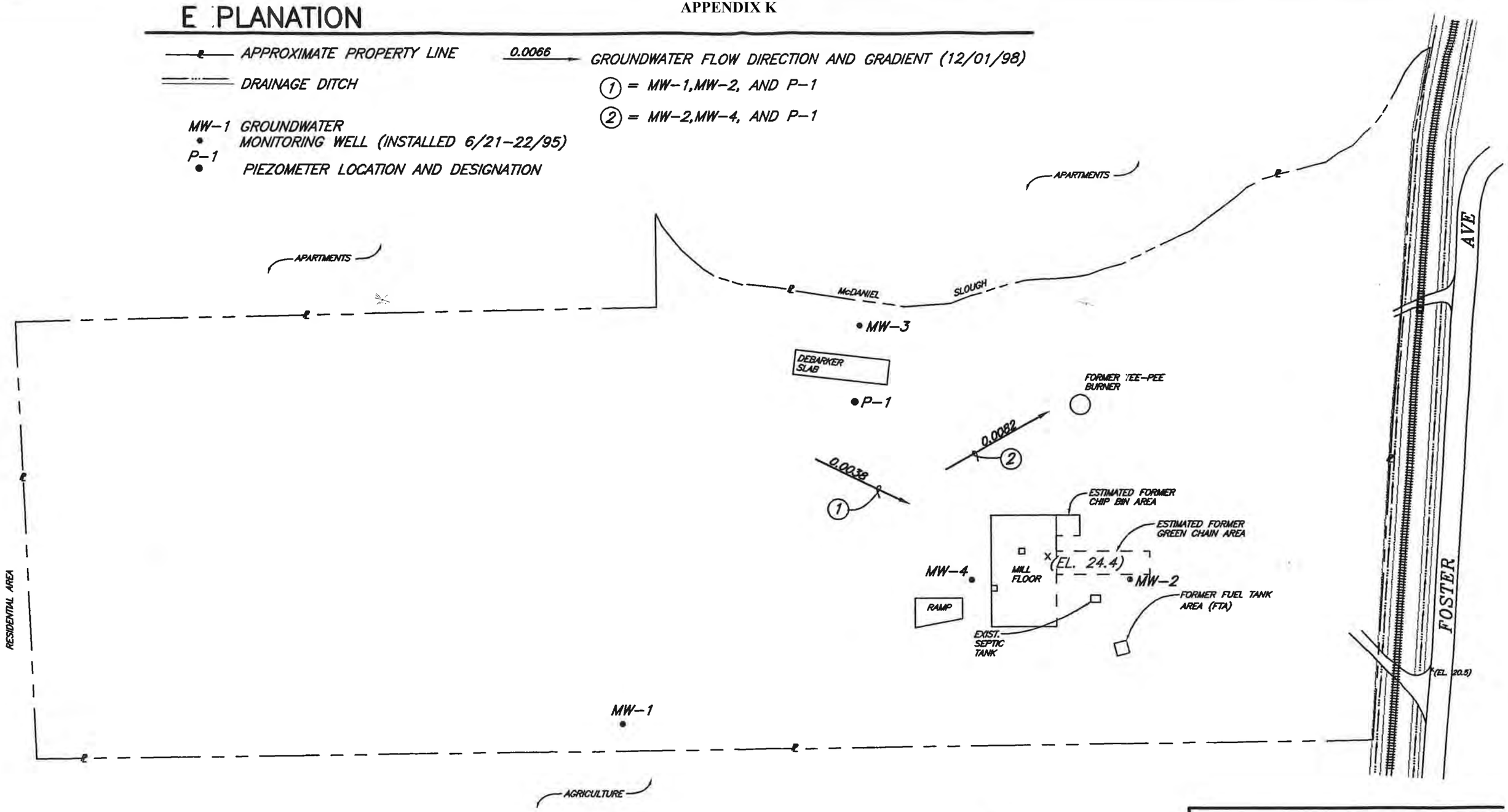
MW–1 GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95)

P–1 PIEZOMETER LOCATION AND DESIGNATION

0.0066 GROUNDWATER FLOW DIRECTION AND GRADIENT (12/01/98)

(1) = MW–1, MW–2, AND P–1

(2) = MW–2, MW–4, AND P–1



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

GROUNDWATER FLOW DIRECTION AND GRADIENT

SHN 930121.100
DECEMBER, 1998

FIGURE **2**

930121P2–4

TABLE 2
SUMMARY OF ANALYTICAL RESULTS FROM WATER SAMPLES COLLECTED

SAMPLE ID	DATE	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)
MW-4	12/01/98	<0.50	<50	52	<100

Groundwater flow in the mill/debarker slab area was toward the south-southeast, during this sampling event. Groundwater analytical results from MW-4 indicate that petroleum hydrocarbons and volatile organic compounds (VOC-BTEX) were below the method reporting limits, except for the detection of diesel range petroleum hydrocarbons at just above the detection limit.

Geochemical parameters collected during the December 1998 groundwater-monitoring event are summarized in Table 3.

TABLE 3
GEOCHEMICAL PARAMETER MEASUREMENT

WELL#	Date	DCO_2	DO	Eh
MW-4	12/01/98	75	7.9	118

DO concentrations detected in site wells are sufficient to support biodegradation, and Eh measurements indicate that aerobic conditions exist at the site. DCO_2 concentrations are sufficient to indicate that biodegradation may be occurring at the site.

REQUEST FOR CESSATION OF GROUNDWATER MONITORING PROGRAM

Results of groundwater sampling conducted to date, especially since February 1998 (Attachment D), documents no detection, at laboratory method detection levels, of the contaminants of concern. Per your August 24, 1998 response to our request (Second Quarter Report, June, 1998) for rescinding well monitoring and sampling, SHN continued to sample MW-4. This period represented significant rainfall immediately preceding the sampling event, and is representative of high groundwater conditions, with MW-4 being directly downgradient of the former contamination source at the slab area. Diesel contamination (52 ug/L) in the groundwater from

SHN CONSULTING ENGINEERS & GEOLOGISTS

MW-4 shows a marked decrease from the post source removal (July 1997) monitoring (11/27/97) level of 97 ug/L. Water quality data collected in August 1998 and in December 1998 represents water quality conditions during low and high water-level conditions, respectively. This information fulfills the HCDEH request that water quality data be collected during low and high water-level conditions. Given the information presented in this report, and previously submitted source removal documentation, SHN believes that the site warrants closure to further investigation at this time, including cessation of groundwater monitoring at the site. I request, on behalf of ERS, that HCDEH consider this site for closure to further investigation. In the event that cessation of groundwater monitoring is granted for the site, SHN will coordinate the proper abandonment of existing monitoring wells and piezometer. All well/piezometer abandonment activities would be conducted under permit form the HCDEH.

If you have any questions, please call Frans Lowman or me at 441-8855.

Sincerely,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
My 3-31-2002
CIVIL
STATE OF CALIFORNIA

Martin E. Lay, P.E.
Project Manager

MEL:lms
Attachments (A, B, C & D, plus 2 figures)
cc: Dennis Scott, ERS
Bonnie Rolandelli, RWQCB
Steve Tyler, City of Arcata

ATTACHMENT A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

24 August 1998

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Sawmills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the 22 June 1998 *"Second Quarter 1998 Groundwater Monitoring Report"* prepared by SHN Consulting Engineers and Geologists (SHN). SHN requests on your behalf that HCDEH rescind the monitoring program for this site. HCDEH concurs in part with this request. Monitoring shall be reduced to semi-annual during high and low stands of groundwater for contaminants of concern from well MW-4 only. Sampling of all other wells may be discontinued. All appropriate wells should be gauged to determine the groundwater gradient at the site during the semi-annual sampling events. Please call me at 707.441.5690, if you have any questions.

Sincerely,

Dale R Dell'Osso by KA

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.015/697L

ATTACHMENT B

FIELD DATA

APPENDIX K

FIELD SAMPLING LOG

PROJECT # 093121.100 DATE 12/1/98
CLIENT ERS SAMPLER DEO
WELL NO. MW-4 ELEVATION _____
TOTAL DEPTH 14.3 WATER
DEPTH ELEVATION _____
TO WATER 3.80
HT OF WATER COLUMN _____ X (0.66) = CASING VOL _____

TURBIDITY	CO_2	DO	Eh	DEPTH	TIME	WATER REMOVED	EC	TEMP	pH
							312	59.8	6.34
							282	58.4	6.10
							280	58.0	6.15
	75	7.9	118						

TOTAL _____
INITIAL WATER VOLME _____

SAMPLING EQUIPMENT _____
SAMPLE TIME _____
SAMPLE ANALYSIS _____
LABORATORY _____
REMARKS _____
_____

GROUND WATER ELEVATIONS

APPENDIX K

JOB NO.: 93121.100
CLIENT: ERS
LOCATION: Arcata Bottoms

WELL NO.	DATE OF READING	MEAS. PT. ELEVATION	DEPTH TO WATER IN FT.	WATER SUR. ELEVATION
MW-3	12/1/98	24.445	10.71	13.735
P-1	↓	28.57	4.55	24.02
MW-1		26.69	2.42	24.27
MW-4		27.72	3.80	23.92
MW-2		26.04	3.33	22.71

SHN

ATTACHMENT C

ANALYTICAL RESULTS

WORK ORDER
CHAIN OF CUSTODY RECORD

Alpha Analytical Laboratories Inc. • 860 Waugh Lane, H-1, Ukiah, CA 95482 • (707) 468-0401 • FAX (707) 468-5267

DATE 12/1/98 PAGE 1 OF 1

CLIENT'S NAME: Eel River Sawmills, Inc.

STREET ADDRESS: 1053 Northwestern Ave CITY: Fortuna STATE: CA ZIP: 95540

PROJECT NAME: Specialty Mill

CONTRACT/PURCHASE ORDER/QUOTE NUMBER:

PROJECT MANAGER: Martin Lay - SHN

PHONE NUMBER: 707/725 6911 (E.R.S.); 707/441-8855 (SHN)

FAX NUMBER: 441-8677 SHN

SITE CONTACT: Dennis Scott

SIGNATURE OF PERSON AUTHORIZING WORK UNDER TERMS STATED ON REVERSE SIDE OF THIS FORM.

SAMPLED BY

SAMPLE CONDITION ON RECEIPT:

COLD/ICED? Yes

BUBBLES OR AIR SPACE? NO

WERE SAMPLES PRESERVED? /

SAMPLE NUMBER IDENTIFICATION	DATE	TIME	LAB SAMPLE NUMBER	SAMPLE TYPE: LIQ	AIR	SOLID	COMP	GRAB	NO. OF CONT'S	ANALYSES: TPHG	BTEX	TPHD	TPH MO	EXPLAIN IRREGULARITIES BELOW
MW-4	12/1	14:00	98-1202-6	X					4	X	X	X	X	

RELINQUISHED BY: (SIGNATURE) [signature]

RECEIVED BY: (SIGNATURE) [signature: Lisa Muller]

DATE 12/2 TIME 0945

RELINQUISHED BY: (SIGNATURE)

RECEIVED BY: (SIGNATURE)

DATE TIME

RELINQUISHED BY: (SIGNATURE)

RECEIVED FOR LABORATORY BY:

TURN AROUND TIME REQUESTED: 10-14 DAYS (wks)

SAMPLE CONTROL OFFICER

METHOD OF SHIPMENT: U.P.S.

AUTHORIZED BY:

SPECIAL INSTRUCTIONS: Copy of results to M. Lay @ SHN

DRIVING TIME | SITE TIME | TOTAL TIME

SAMPLE DISPOSITION:

1. STORAGE TIME REQUESTED ____ DAYS (SAMPLES WILL BE STORED FOR 30 DAYS WITHOUT ADDITIONAL CHARGES; THEREAFTER STORAGE CHARGES WILL BE BILLED AT THE PUBLISHED RATES.)
2. SAMPLE TO BE RETURNED TO CLIENT? ☐ YES ☐ NO

HAZARDOUS MATERIALS ARE THE PROPERTY OF THE CLIENT. THE CLIENT IS RESPONSIBLE FOR PROPER DISPOSAL OF HAZARDOUS WASTES. CLIENTS NOT PICKING UP HAZARDOUS WASTES MAY BE ASSESSED AN APPROPRIATE FEE.

APPENDIX K

Alpha Analytical Laboratories Inc. • 860 Waugh Lane, H-1, Ukiah, California 95482
(707) 468-0401

CHEMICAL EXAMINATION REPORT

Eel River Sawmill
1053 Northwestern Ave.
Fortuna, CA 95540
Attn: Tom Stephens

Date Printed: 12/08/98
Page: 1

Batch Number	Receipt Date	Client	Client P.O.	Send Via
98-1202-006	12/02/98 09:45	EELSAW	097160	Mail

Batch 98-1202-006 consisted of 1 Sample and 7 Tests

Sample 1 MW #4
Sample Type: Water Sampled by: Sampled: 12/01/98 14:00

	METHOD	EXTRACTED	TEST DATE	RESULT	UNITS	PQL	DILUTION
TPH Gasoline W/BTXE							
TPH - Gasoline	GCFID/5030		12/04/98	ND	ug/L	50.0	
Benzene	602		12/04/98	ND	ug/L	.300	
Toluene	602		12/04/98	ND	ug/L	.300	
Ethylbenzene	602		12/04/98	ND	ug/L	.500	
Total Xylenes	602		12/04/98	ND	ug/L	.500	
TPH - Diesel & Motor Oil							
TPH - Diesel	8015/MOD	12/02	12/02/98	52	ug/L	50	
TPH - Motor Oil	8015/MOD	12/02	12/02/98	ND	ug/L	100	

PQL - Practical Quantitation Limit ND - None Detected
* - Indicates Detection Limit altered due to Sample Dilution

NOTES:

Bruce L. Gove
Laboratory Director

Bruce L. Gove

Date Printed: 12/08/98

ATTACHMENT D

SUMMARY TABLE OF HISTORICAL GROUNDWATER-LEVELS AND ANALYTICAL RESULTS

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-1															
	06/28/95	<0.50	<50	<50	<500	<0.010	0.022	0.052	0.03	<0.020	0.43	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.049	<0.020	0.88	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.57	--	--	--	--
	08/23/96	<0.50	<50	<50	<500	<0.010	0.032	0.059	0.030	<0.020	0.27	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.97	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.023	<0.020	0.89	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	0.024	0.033	<0.020	0.36	--	9.6	80	200
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	11.2	60	90
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	19.02 [2]	55	29
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.1	60	94
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.8	90	55
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.0	65	210
MW-2															
	06/29/95	<0.50	<50	74 [1]	<500	--	--	--	--	0.036	1.1	<50	--	--	--
	02/23/96	<0.50	<50	180 [1]	<500	--	<0.0050	<0.020	<0.020	<0.020	1.1	--	--	--	--
	05/24/96	<0.50	<50	110 [1]	<500	<0.010	<0.0050	<0.020	0.34	<0.020	1.0	--	--	--	--
	08/23/96	<0.50	<50	64 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.90	--	--	--	--
	11/22/96	<0.50	<50	300 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	0.96	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.020	0.074	<0.020	1.3	--	--	--	--
	05/22/97	<0.50	<50	100 [1]	<500	<0.010	<0.010	0.026	0.082	<0.020	1.3	--	6.3	110	105
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.2	100	110
	11/25/97	<0.50	<50	140	<500	--	--	--	--	--	--	--	8.8	90	98
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.7	50	127
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	4.9	100	148
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.7	55	187

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

[2] DO value not realistic, disregard.

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALTY MILL, LOP # 12518
SUMMARY OF ANALYTICAL RESULTS FROM MONITORING WELL GROUNDWATER SAMPLES

Sample ID	Date	BTEX (ug/L)	TPHG (ug/L)	TPHD (ug/L)	TPHMO (ug/L)	Cadmium (mg/L)	Chromium (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Tannin & Lignin (mg/Tannin/L)	EPA 8270/8080 (ug/L)	DO (ppm)	DCO2 (ppm)	Eh (millivolts)
MW-3															
	06/29/95	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3	<50	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.031	<0.020	4.5	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	5.2	--	--	--	-
	08/23/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.5	--	--	--	--
	11/22/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	3.1	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	4.2	--	--	--	--
	05/22/97	<0.50	<50	<50	<500	<0.010	<0.010	<0.020	0.060	<0.020	3.6	--	7.4	200	110
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	10.7	160	30
	11/25/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.05	165	-27
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	8.2	130	108
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.8	160	137
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	7.4	150	153
MW-4															
	06/29/95	<0.50	<50	<50	<500	<0.010	0.062	0.11	0.061	<0.020	1.7	<50	--	--	--
	12/20/95	--	--	--	--	<0.010	<0.0050	<0.020	0.020	<0.020	--	--	--	--	--
	02/23/96	<0.50	<50	<50	<500	--	<0.0050	<0.020	0.17	<0.020	2.1	--	--	--	--
	05/24/96	<0.50	<50	<50	<500	<0.010	<0.0050	<0.020	0.38	<0.020	1.7	--	--	--	-
	08/23/96	<0.50	<50	52 [1]	<500	<0.010	0.014	0.034	<0.020	<0.020	1.9	--	--	--	--
	11/22/96	<0.50	<50	88 [1]	<500	<0.010	<0.0050	<0.020	<0.020	<0.020	1.3	--	--	--	--
	02/28/97	<0.50	<50	<50	<500	<0.010	<0.0050	0.021	0.080	<0.020	2.1	--	--	--	--
	05/22/97	<0.50	<50	63 [1]	<500	<0.010	<0.010	0.024	0.060	<0.020	1.3	--	6.7	100	90
	08/26/97	<0.50	<50	<50	<500	--	--	--	--	--	--	--	9.9	100	110
	11/25/97	<0.50	<50	94	<500	--	--	--	--	--	--	--	8.47	110	48
	02/26/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.0	70	123
	05/28/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	5.3	120	142
	08/21/98	<0.50	<50	<50	<500	--	--	--	--	--	--	--	6.8	70	--

[1] Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. The material may be highly degraded or weathered diesel oil. All diesel results reported represent the amoumt of material in the diesel range of molecular weights only.

APPENDIX K

APPENDIX K
EEL RIVER SAWMILLS INC. - SPECIALTY .L, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-1	06/27/95	6.40	20.29
	12/20/95	2.78	23.91
	01/17/96	2.43	24.26
	02/23/96	2.39	24.30
	03/22/96	3.32	23.37
	04/29/96	2.95	23.74
	05/24/96	4.07	22.62
	06/25/96	6.92	19.77
	07/26/96	8.79	17.90
	08/23/96	10.38	16.31
	09/26/96	12.22	14.47
	10/28/96	13.19	13.50
	11/22/96	6.82	19.87
	12/27/96	2.41	24.28
	01/27/97	2.41	24.28
	02/28/97	2.64	24.05
	03/27/97	3.87	22.82
	04/24/97	3.39	23.30
	05/22/97	5.97	20.72
	06/30/97	8.26	18.43
	07/28/97	9.77	16.92
	08/26/97	11.43	15.26
	09/24/97	13.09	13.60
	10/22/97	13.93	12.76
	11/25/97	8.48	18.21
	12/30/97	4.22	22.47
	01/27/98	2.41	24.28
	02/26/98	2.37	24.32
	03/27/98	2.35	24.34
	04/24/98	3.24	23.45
	05/28/98	4.36	22.33
	06/26/98	6.33	20.36
	07/20/98	7.62	19.07
	08/21/98	9.15	17.54
MW-2	06/27/95	6.40	19.64
	12/20/95	3.85	22.19
	01/17/96	3.17	22.87
	02/23/96	3.10	22.94
	03/22/96	4.82	21.22
	04/29/96	4.06	21.98
	05/24/96	4.58	21.46
	06/25/96	7.03	19.01
	07/26/96	8.02	18.02
	08/23/96	8.67	17.37
	09/26/96	9.06	16.98
	10/28/96	7.73	18.31
	11/22/96	4.22	21.82
	12/27/96	3.09	22.95
	01/27/97	3.13	22.91
	02/28/97	3.77	22.27
	03/27/97	5.38	20.66
	04/24/97	4.04	22.00
	05/22/97	6.40	19.64
	06/30/97	7.48	18.56
	07/28/97	8.48	17.56
	08/26/97	8.88	17.16
	09/24/97	8.61	17.43
	10/22/97	8.84	17.20
	11/25/97	4.88	21.16
	12/30/97	4.88	21.16
	01/27/98	3.43	22.61
	02/26/98	3.51	22.53
	03/27/98	3.46	22.58
	04/24/98	4.89	21.15
	05/28/98	4.74	21.30
	06/26/98	6.84	19.20
	07/20/98	7.67	18.37
	08/21/98	8.47	17.57

APPENDIX K
EEL RIVER SAWMILLS INC. - SPECIALT' LL, LOP # 12518
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
MW-3	06/27/95	11.55	12.90
	12/20/95	14.78	9.67
	01/17/96	10.18	14.27
	02/23/96	8.00	16.45
	03/22/96	8.80	15.65
	04/29/96	9.41	15.04
	05/24/96	10.32	14.13
	06/25/96	12.03	12.42
	07/26/96	14.40	10.05
	08/23/96	16.19	8.26
	09/26/96	16.05	8.40
	10/28/96	15.49	8.96
	11/22/96	14.44	10.01
	12/27/96	9.35	15.10
	01/27/97	7.09	17.36
	02/28/97	8.82	15.63
	03/27/97	9.73	14.72
	04/24/97	10.33	14.11
	05/22/97	11.27	13.18
	06/30/97	13.12	11.33
	07/28/97	15.23	9.22
	08/26/97	16.33	8.12
	09/24/97	15.75	8.70
	10/22/97	15.72	8.73
	11/25/97	14.53	9.92
	12/30/97	12.77	11.68
	01/27/98	9.20	15.25
	02/26/98	7.20	17.25
	03/27/98	7.89	16.56
	04/24/98	9.15	15.30
	05/28/98	10.08	14.37
	06/26/98	11.37	13.08
	07/20/98	13.07	11.38
	08/21/98	14.98	9.47
MW-4	06/27/95	8.06	19.66
	12/20/95	5.11	22.61
	01/17/96	4.02	23.70
	02/23/96	3.76	23.96
	03/22/96	6.20	21.52
	04/29/96	5.15	22.57
	05/24/96	6.09	21.63
	06/25/96	8.56	19.16
	07/26/96	9.45	18.27
	08/23/96	10.01	17.71
	09/26/96	10.67	17.05
	10/28/96	9.34	18.38
	11/22/96	5.90	21.82
	12/27/96	3.72	24.00
	01/27/97	3.80	23.92
	02/28/97	4.96	22.76
	03/27/97	6.91	20.81
	04/24/97	5.41	22.31
	05/22/97	8.05	19.67
	06/30/97	9.11	18.61
	07/28/97	9.85	17.87
	08/26/97	10.37	17.35
	09/24/97	10.24	17.48
	10/22/97	10.54	17.18
	11/25/97	6.90	20.82
	12/30/97	6.37	21.35
	01/27/98	3.80	23.92
	02/26/98	4.10	23.62
	03/27/98	4.25	23.47
	04/24/98	6.38	21.34
	05/28/98	6.63	21.09
	06/26/98	8.41	19.31
	07/20/98	9.08	18.64
	08/21/98	9.75	17.97

APPENDIX K

EEL RIVER SAWMILLS INC. - SPECIALT LL, LOP # 12518

SUMMARY OF MONITORING WELL GROUNDWATER ELEVATIONS

WELL NUMBER	DATE OF READING	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (a) (in feet)
P-1	06/27/95	10.68	17.89
	12/20/95	10.39	18.18
	01/17/96	5.51	23.06
	02/23/96	4.73	23.84
	03/22/96	8.52	20.05
	04/29/96	7.57	21.00
	05/24/96	9.09	19.48
	06/25/96	10.64	17.93
	07/26/96	11.54	17.03
	08/23/96	12.88	15.69
	09/26/96	DRY	--
	10/28/96	13.34	15.23
	11/22/96	9.03	19.54
	12/27/96	4.14	24.43
	01/27/97	4.00	24.57
	02/28/97	7.25	21.32
	03/27/97	9.19	19.38
	04/24/97	8.09	20.48
	05/22/97	10.09	18.48
	06/30/97	11.26	17.31
	07/28/97	11.98	16.59
	08/26/97	13.56	15.01
	09/24/97	12.71	15.86
	10/22/97	13.21	15.36
	11/25/97	10.01	18.56
	12/30/97	9.49	19.08
	01/27/98	5.42	23.15
	02/26/98	5.96	22.61
	03/27/98	6.26	22.31
	04/24/98	8.65	19.92
	05/28/98	9.14	19.43
	06/26/98	10.43	18.14
	07/20/98	11.05	17.52
	08/21/98	11.84	16.73

APPENDIX L

JUNE 1996 SUBSURFACE INVESTIGATION REPORT OF FINDINGS 2000 FOSTER AVENUE ARCATA, CALIFORNIA

Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

Prepared for:

EEL RIVER SAWMILLS, INC.

SHN
Consulting Engineers & Geologists, Inc.
812 W. Wabash
Eureka, CA 95501
707/441-8855

AUGUST 1996

APPENDIX L

SHN
CONSULTING ENGINEERS
& GEOLOGISTS

John R. Salvage, PE
K. Jeff Nelson, PE
Roland S. Tannehill, CEG

812 W. Wabash
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(707) 441-8855
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480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

Reference: 930121.100

August 23, 1996

Mr. Dale Dell'Osso
Humboldt County Department of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: JUNE 1996 SUBSURFACE INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE, ARCATA, CALIFORNIA, HUMBOLDT AP #505-161-11, LOP CASE #12518 (FORMERLY SPECIALTY MILL)

Dear Mr. Dell'Osso:

The attached Report of Findings for the property located at 2000 Foster Avenue, Arcata, California, is being submitted by SHN Consulting Engineers & Geologists, Inc. for and with the approval of Eel River Sawmills, Inc. (ERS).

The report presents results of soil and groundwater sampling on the property during this continuation phase of subsurface investigative work.

Please review the enclosed information and call me at 707/441-8855, or Dennis Scott (ERS) at 707/725-6911 if you have any questions.

Thank you for your cooperation with this project.

Sincerely ,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

Martin E. Lay, P.E.
Project Manager

MEL:ls:lms
Enclosure
cc w/enclosure: Dennis Scott, Eel River Sawmills, Inc.
Rick Azevedo, NCRWQCB
Steve Tyler, City of Arcata

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APPENDIX L

Reference: 930121.100

JUNE 1996 SUBSURFACE INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA

Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

Prepared for:

EEL RIVER SAWMILLS, INC.

Prepared by:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash
Eureka, CA 95501-2138
707/441-8855

August 1996

QA/QC:FL

APPENDIX L

INITIAL GROUNDWATER INVESTIGATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE, ARCATA, CALIFORNIA

Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

EXECUTIVE SUMMARY

Eel River Sawmill (ERS) is submitting the following summary of continued groundwater and soils field investigation on the subject property in response to the Humboldt County Division of Environmental Health (HCDEH) request for additional information of November 15, 1995, and the conditional work plan approval letter of July 2, 1996. The work was conducted to allow ERS to proceed with obtaining regulatory clearance for residential type site development. The project site is an abandoned, historic, lumber mill. SHN has conducted a Phase I Environmental Site Assessment, initial Phase II field investigations, and initial groundwater investigation prior to the investigation work covered by this report of findings.

Specific areas of documented soil contamination include the historic fuel tank area, the vehicle maintenance area, the debarker area, isolated areas of the old log deck, the mill leachfield area, and isolated general site areas. The levels of soil contamination (petrochemical) at the fuel tank area, debarker area, and vehicle maintenance area are sufficient to warrant remedial action. Groundwater characterization conducted to date indicates potential petrochemical contamination associated with the former fuel tank area.

1. Metals dissolved in the site groundwater, documented to date, are not hazardous and do not pose a health risk for potential potable water uses, if any.

2. Soils remedial action is scheduled to proceed in 1996, weather permitting and upon regulatory approval of the SHN, July 1996 Remedial Action Plan. Remedial action proposed is excavation, transfer off site to Mill A, and, at a minimum, winterization at Mill A, of the contaminated soil. The excavation work would minimize potential contaminant mobilization in site groundwater if another normal wet winter is realized on the North Coast.

3. Future groundwater investigation should be contingent upon findings of quarterly monitoring events, scheduled to be conducted in September 1996 and December 1996, and proposed soil excavation operations.

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JUNE 1996 SUBSURFACE INVESTIGATION REPORT OF FINDINGS
2000 FOSTER AVENUE, ARCATA, CALIFORNIA
Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

INTRODUCTION

This Subsurface Investigation Report of Findings is being submitted by SHN Consulting Engineers & Geologists, Inc. (SHN), on behalf of and with the approval of EEL RIVER SAWMILLS, INC. (ERS). It is being submitted to document June 1996 continued subsurface soil and groundwater investigations conducted by SHN on the subject site. The site is under the Local Oversight Program (LOP) regulatory review of the Humboldt County Division of Environmental Health (HCDEH). Additional subsurface investigative work was requested by HCDEH in letters dated November 15, 1995 and July 2, 1996, and submitted to ERS (see Appendix A).

Work was conducted by SHN in general conformance with the Work Plan for Continued Subsurface Investigation and Initial Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Humboldt County AP# 505-161-11, Arcata, CA (SHN, March 1996; excerpt attached in Appendix A). Conditional written approval of the work plan, (following verbal conditional approval) in a letter dated July 2, 1996, was submitted by HCDEH to SHN (see Appendix A).

The report follows the suggested format outlined in the Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks (August 10, 1990), and the California Regional Water Quality Control Board, North Coast Region (RWQCB), "Appendix A" (February 24, 1992).

Included in this report of findings is a background history of the site, a description of the current subsurface soils and groundwater well point investigation conducted by SHN, the sampling and testing methodologies used, a summary of the analytical results, site maps showing the sampling locations, the subsurface exploration logs, and a discussion of results.

OBJECTIVE

ERS's ultimate objective with respect to the property is to be able to sell the property, potentially for future single or multiple family residential development. The objective of this investigation is to respond to a request from the HCDEH for subsurface investigation to further characterize the lateral and vertical extent of soil, and potentially, groundwater contamination.

Additionally, the information collected will be used to refine and guide the proposed site remedial action.

SITE DESCRIPTION

Site Location

As seen in Figure 1, the approximately 17 acre project site is located northwest of the City of Arcata, California, in the northwest 1/4 of Section 29, Township 6 north, Range 1 east, Humboldt Base and Meridian. The site is located at 2000 Foster Avenue, adjacent to the Arcata City limits, in an unincorporated area of Humboldt County. It is legally delineated as Humboldt County Assessor's parcel number 505-161-11.

Site Layout

The project site is situated at an elevation of approximately 20 to 25 feet above mean sea level, in the relatively flat alluvial plain of the Mad River referred to as the Arcata Bottoms. The Arcata Bottoms area gently slopes down in a westward direction.

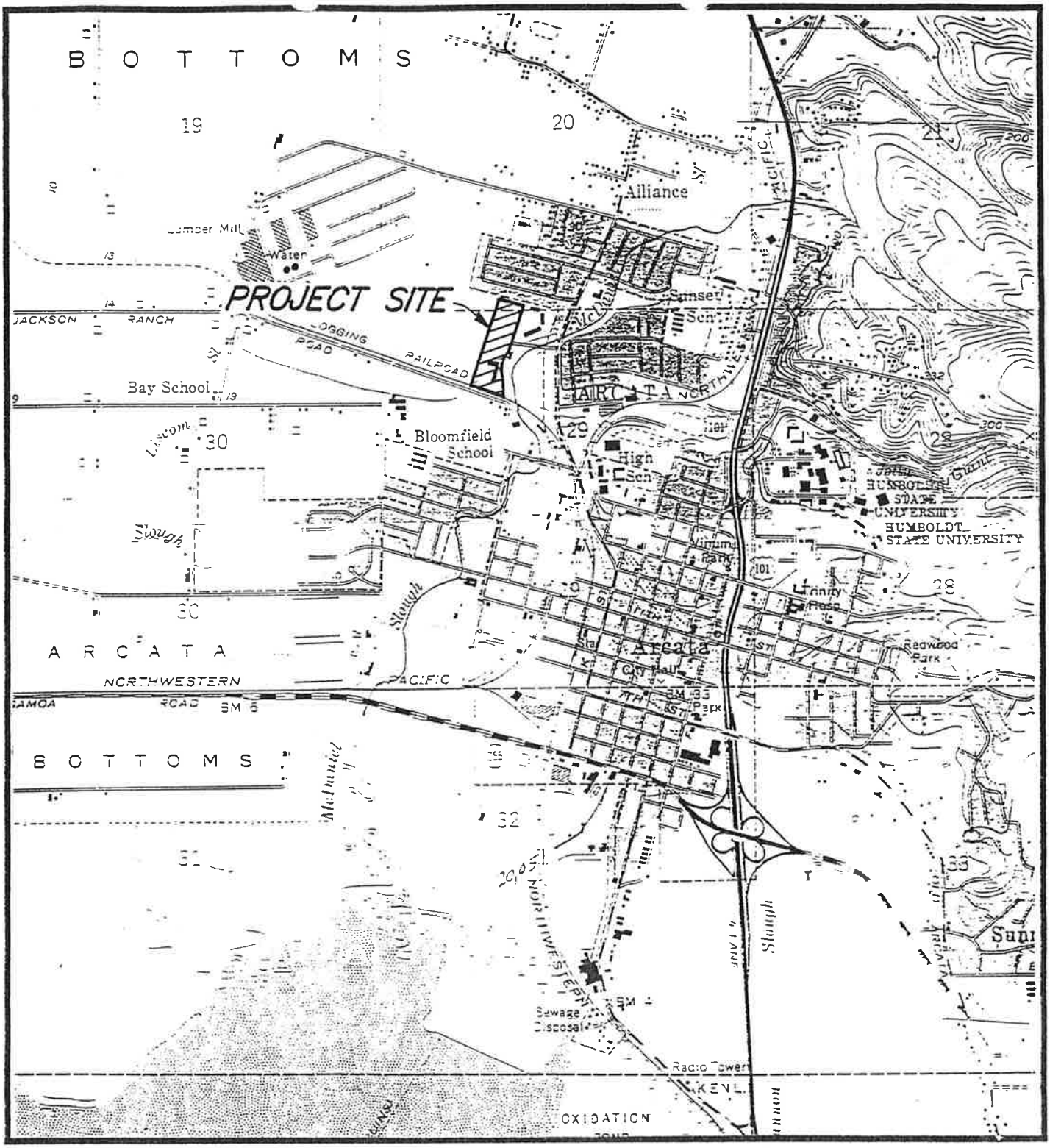
Surface waters closest to the project site are McDaniel Slough (Janes Creek) located on the eastern boundary of the project site and Liscom Slough located approximately 0.75 miles west of the project site (Figure 1).

Local surface drainage for the project site is to the southwest, and the site is relatively flat with a general slope of less than 1 percent. An earthen ditch on the north side of the railroad tracks conveys drainage to the east, where it is received into the waters of McDaniel Slough/Janes Creek (Figure 2).

Site Hydrogeology

Subsurface investigations conducted by SHN provide the basis for the following discussion of site hydrogeologic conditions. The project site is located on a moderately sloping surface of a sequence of Holocene age stream deposits (Janes Creek alluvium). Sedimentary deposits encountered in the test pits, well, and piezometer borings consisted of up to 4.25 feet of fill associated with previous industrial use of the site. The fill is comprised predominantly of sandy to silty gravel and well rounded cobbles to 6 inches in maximum dimension. Common

APPENDIX L



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100
JUNE 1996
FIGURE 1

SHN

EXPLANATION

TP–13 — TEST PIT LOCATION AND DESIGNATION

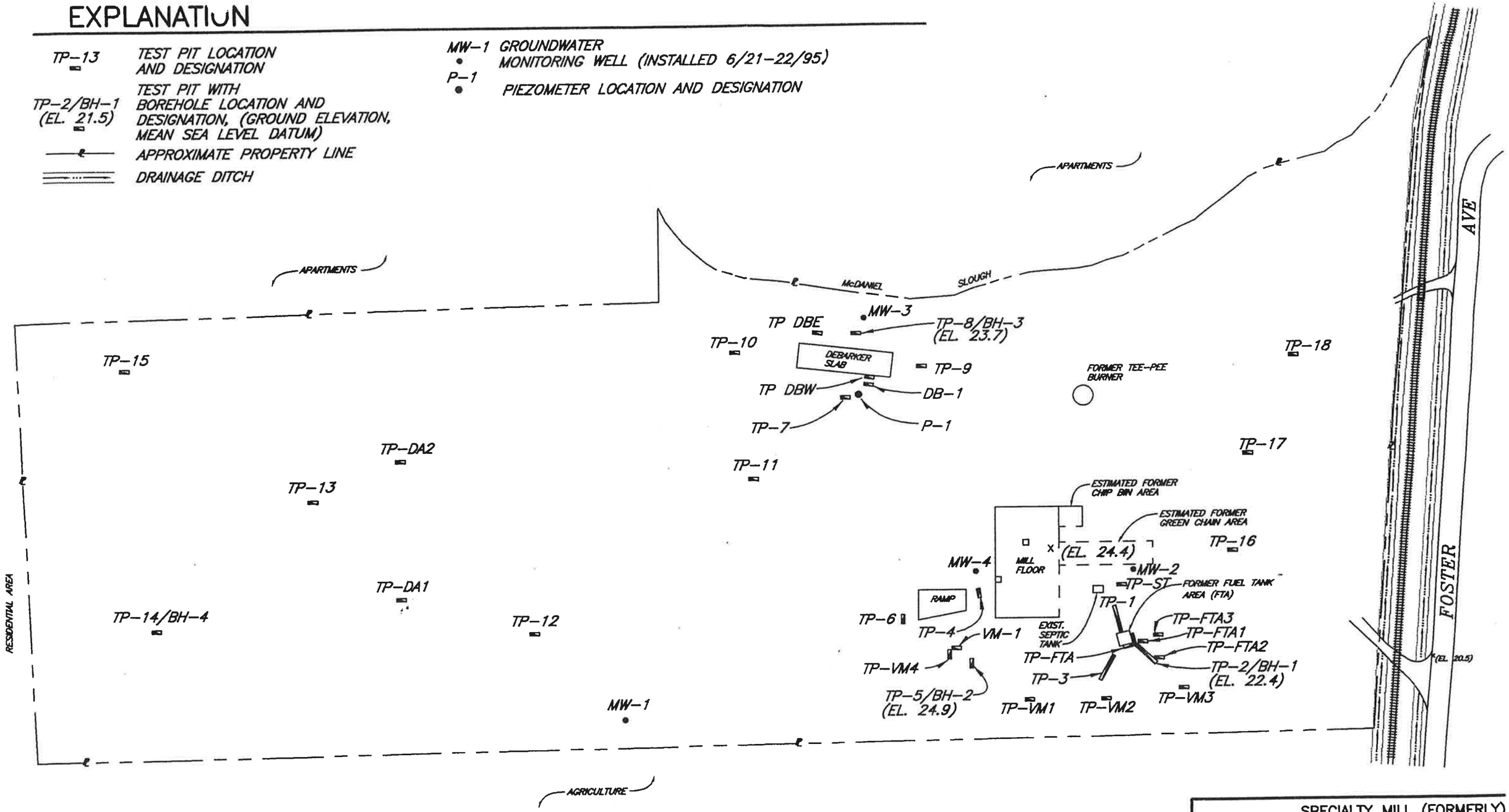
TP–2/BH–1 (EL. 21.5) — TEST PIT WITH BOREHOLE LOCATION AND DESIGNATION, (GROUND ELEVATION, MEAN SEA LEVEL DATUM)

APPROXIMATE PROPERTY LINE

DRAINAGE DITCH

MW–1 — GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95)

P–1 — PIEZOMETER LOCATION AND DESIGNATION



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

SITE PLAN (PREVIOUS WORK)

SHN 930121.100
JULY, 1996

FIGURE 2

SHN

wood debris (sawdust, bark, log trimmings, and milled lumber), occasional concrete rubble and metal debris were also encountered in the fill. The fill is underlain by alluvial deposits consisting of interbedded medium to very stiff silty to sandy clay, sandy to clayey silt, and dense silty to clayey sand.

Shallow, unconfined to semi-confined groundwater is present in the alluvial deposits. Based on measured groundwater elevations, shallow groundwater beneath the site flows predominantly toward the southeast. Confined groundwater is present in deeper alluvial deposits (encountered in well MW-3), and is separated from the shallow groundwater by low permeability silty clay and very clayey silt.

SITE BACKGROUND

Historical use of the property, until 1950, was open space, undeveloped land, and reportedly pasture (SHN, 1993). An old growth Redwood lumber mill was constructed on the site in 1951, and the mill, through various owners and changes in milling operations, continued operation until 1986 (most recently as Specialty Mill). The mill structures were then dismantled and the equipment was liquidated. Remnants of the mill operations existing on site at present include concrete slab foundations for the sawmill, log debarker, and mill loading ramps. Additionally, the northern half of the site was used as a log deck area with rocked loading corridors and wood debris laden deck areas. No site development has been conducted since the mill dismantling operations.

Findings of previous subsurface investigations were reported to HCDEH by ERS (SHN, January 1995, August 1995). See Figure 2 and Appendix B.

Several potential source areas of petrochemical contamination were identified in the previous investigations. Areas of potential concern are depicted on Figure 2, and include the following:

- **Fuel Tank Area (FTA).** Located at the southwest portion of the property, the fuel tank area included historic underground fuel tank (UGT) and above ground tank (AGT) fueling facilities (contents reportedly gasoline and diesel, of unknown capacity; SHN, 1993).

- **Septic Tank Area (ST).** A concrete, domestic, wastewater septic tank was found on the site southwest of the mill structure and east of the fuel tank area location. A septic tank effluent leachfield area associated with the practices involved with septic tank usage has been estimated.

- **Vehicle Maintenance Area (VM).** Vehicle maintenance operations are not well documented as to site specific location, but historical photograph review and personnel interviews conducted for the Phase I environmental site assessment indicated a vehicle maintenance area that was located northwest of the mill and west of the "ramp" area. (SHN 1993).

- **Debarker Area (DB).** The log debarking structure was located northeast of the mill, adjacent to McDaniel Slough. A remnant concrete and steel foundation remains.

- **Deck Area (DA-general site).** Raw logs brought to the site for milling were stored to the north of the mill structure in decks running south to north. Access corridors ran between the log decks. The access corridors onto the site at the south and within the log deck area appear to have been heavily rocked, and are still well defined.

CURRENT SUBSURFACE INVESTIGATION

Based on the results of soil and groundwater sampling conducted in February and May 1994, a hydrogeologic investigation was conducted to further characterize the groundwater in the assumed downgradient direction from specific areas of concern with previously documented soils contamination. Appendix B presents a summary of laboratory results previously collected on the project. Figure 2 shows previous sampling locations.

SHN planned and initiated subsurface investigations to be in conformance with current regulatory guidelines, as recommended by the California State Water Resources Control Board, Resolution No. 92-49. Work was conducted in general conformance with the HCDEH approved work plan (SHN, March 1996) mentioned above, with the following exceptions, as discussed with HCDEH during field operations:

- **Soil gas survey** work was not conducted at the debarker area due to a predetermined (field screen with OVA) lack of volatile organic compounds.

- **Overexcavation** of soil contaminated by a release of apparent hydraulic/waste oil during well point pit excavation was conducted at the debarker area subsequent to investigation work.

On June 25 and 26, 1996, SHN personnel supervised the backhoe (24 inch bucket) excavation of 15 test pits, installed 8 soil gas survey points, installed 3 groundwater well points, and collected soil and groundwater samples. SHN used Hake Construction, of Eureka, to excavate and backfill test pits, and perform site clearing as required for access to test pit locations. A site safety tailgate meeting was conducted on site by SHN personnel prior to starting the fieldwork. Dale Dell'Osso, representing the HCDEH visited the site on June 25 for a walk through of site investigative operations. Figures 3, 4, and 5 show June 1996 sampling locations. Soil gas survey points SG-1 through SG-8 were advanced at the fuel tank area to allow screening for

lateral and vertical extent of soil contamination and to provide a field check on previous soils work. The soil gas survey also allowed for confirming the installation location of well point WP-3.

Soil test pit and well point locations and designations are shown on Figures 3, 4, and 5. Subsurface exploration logs with lithologic descriptions and well point construction details are included in Appendix C.

Soil samples for laboratory analysis were collected from each of the test pits, as proposed in the March 1996 work plan (see Appendix A). Soil excavated from each pit was replaced in the respective pit upon completion of the soil sampling operation. Soil samples (SD-1, SD-2) were also collected from the railroad drainage ditch, along the south property line, as requested by HCDEH.

Well points WP-1, WP-2, and WP-3 were advanced at locations shown on Figure 3 utilizing direct push technology. Each well point was subsequently measured for depth to water, and developed using a peristaltic pump with dedicated tubing and a small diameter stainless steel bailer. Groundwater samples were collected from each newly installed well point. Each existing groundwater monitoring well was also measured for depth to water.

Samples for Quality Control/Quality Assurance (QA/QC) purposes included laboratory-prepared travel blanks and two blind duplicate soil samples. Travel blanks accompanied the samples from collection through delivery to the laboratory, to detect any potential cross contamination during sample storage or transport. Duplicate soil samples were collected from soil sampling points S-103 and S-106, for comparison with the results of each primary sample to determine the reproducibility of the analytical method. Samples were submitted under chain-of-custody to North Coast Laboratories, Ltd. (NCL) of Arcata, California.

Soil Sampling Results and Discussion

Laboratory analytical results for the June 1996 subsurface investigation are summarized in Table 1. A summary of project analytical results from previous sampling conducted by SHN is presented in Appendix B. Laboratory reports of June 1996 analytical results and chain-of-custody documentation are presented in Appendix D The following discussion of sampling results presents the findings for each location (See Figures 3, 4, and 5).

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, JUNE 1996 SAMPLING

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Cadmium[(l)] (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(Inches)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
S-101	6 - 8	6/26/96	2.5 (d)	190	--	--	--	--	--	--	--	--	--	--
S-101	36	6/26/96	<1.0	15 (f)	--	--	--	--	--	--	--	--	--	--
S-102	12	6/25/96	12 (C)	150 (f)	--	--	--	--	--	--	--	--	--	--
S-102	52	6/25/96	<1.0	20 (f)	--	--	--	--	--	--	--	--	--	--
S-103	4 - 8	6/25/96	1.8 (d)	83 (f)	--	--	--	--	--	--	--	--	--	--
S-103 (k)	42 - 46	6/25/96	--	--	--	--	--	--	--	<2.0	72	88	73	9.6
S-103	43	6/25/96	950 (a)	<500 (g)	--	--	--	--	--	--	--	--	--	--
S-103 (QA-1)	43	6/25/96	150 (a)	37 (f)	--	--	--	--	--	--	--	--	--	--
S-104	6 - 8	6/25/96	<2.0 (e)	47 (f)	--	--	--	--	--	--	--	--	--	--
S-104	42	6/25/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-105	6 - 8	6/26/96	1.4 (d)	29 (f)	--	--	--	--	--	<2.0	38	47	59	14
S-105	36	6/26/96	<1.0	<10	--	--	--	--	--	<2.0	64	87	54	5.7
S-106	6	6/26/96	<1.0	30 (f)	--	--	--	--	--	<2.0	43	47	66	2[illegible]
S-106	48	6/26/96	<1.0	<10	--	--	--	--	--	<2.0	85	110	80	9.1
S-106 (QC-2)	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-107	6	6/26/96	1.2 (d)	83 (f)	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<2.0	47	56	160	29 (j)
S-108	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-108	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-109	6	6/26/96	4.8 (d)	180	--	--	--	--	--	--	--	--	--	--
S-109 (k)	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-110	6	6/26/96	<1.0	58	--	--	--	--	--	--	--	--	--	--
S-110	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--

APPENDIX L

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, JUNE 1996 SAMPLING (CONTINUED)

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Cadmium[(i)] (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(inches)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/Kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
S-111	6	6/26/96	1.5 (b)	15 (f)	--	--	--	--	--	--	--	--	--	--
S-111	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-112	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-112	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-113	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-113	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
SD-1		6/26/96	4.3 (d)	190 (f)	--	--	--	--	--	--	--	--	--	--
SD-2		6/26/96	<1.0	15 (f)	--	--	--	--	--	--	--	--	--	--
Groundwater Samples			**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(ug/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**
WP-1		6/26/96	<200 (e)	3800	<50	--	--	--	--	<0.020	<0.0050	0.020	0.090	<0.020
WP-2		6/25/96	<50	<500	<50	<0.50	0.74	<0.50	<0.50	<0.020	<0.0050	0.027	0.12	<0.020
WP-3		6/25/96	1300 (a)	<500	62 (h)	<0.50	1.7	<0.50	<0.50	<0.020	<0.0050	<0.020	0.30	<0.020

-- = Not tested

QA/QC = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample was diluted due to the amount of material in the motor oil range.

(f) Sample does not have the typical pattern of fresh motor oil. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

(g) Sample was diluted due to the large amount of material in the diesel range.

(h) Sample does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.

(i) The reporting limit for cadmium was raised due to matrix interference.

(j) The sample from S-107 at 6' was also tested for Soluble Lead, the result was less then the reporting limit of 0.45 mg/L. The Soluble Threshold Limit Concentration (STLC) for Lead = 5.0 mg/L.

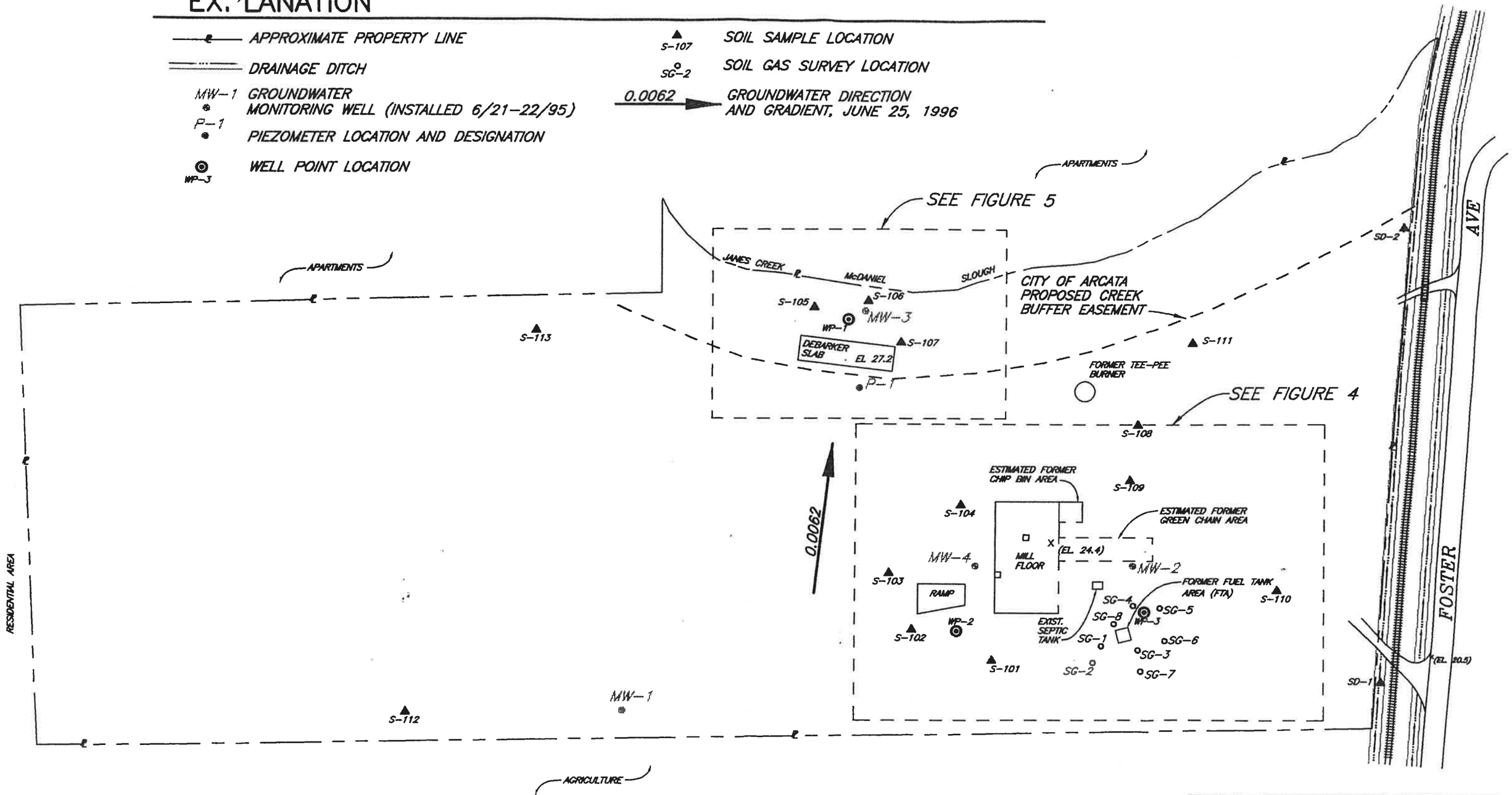
(k) EPA method 8270, semivolatile organics, run on sample. All consitiuents below laboratory detection limit.

E:\930121\June96tbl.XLS

APPENDIX L

EXPLANATION

- APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)
- P-1 PIEZOMETER LOCATION AND DESIGNATION
- WP-3 WELL POINT LOCATION
- S-107 SOIL SAMPLE LOCATION
- SG-2 SOIL GAS SURVEY LOCATION
- 0.0062 GROUNDWATER DIRECTION AND GRADIENT, JUNE 25, 1996



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

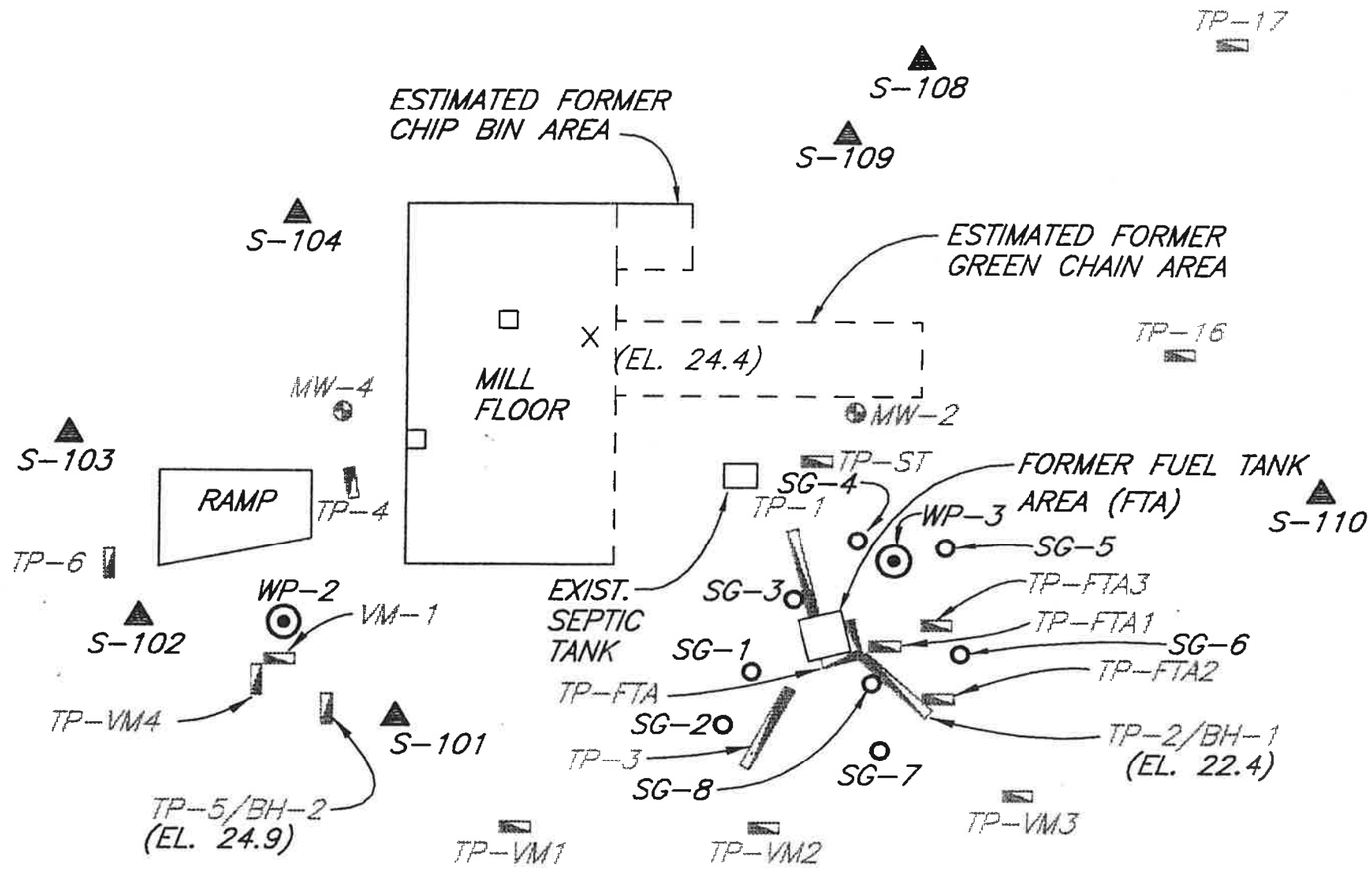
SITE PLAN
SAMPLING LOCATIONS
JUNE 1996

SHN 930121.100
JULY, 1996

FIGURE 3

EXPLANATION

- TP–10 — PREVIOUS SOIL SAMPLE LOCATION
- MW–3 — EXISTING MONITORING WELL
- SG–2 — SOIL GAS SURVEY LOCATION
- WP–3 — WELL POINT LOCATION
- S–107 — SOIL SAMPLE LOCATION



1"=50'

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

FTA–VM AREA SAMPLING LOCATIONS JUNE, 1996

SHN 930121.100
MARCH, 1996

SHN

FIGURE 4

APPENDIX L

EXPLANATION

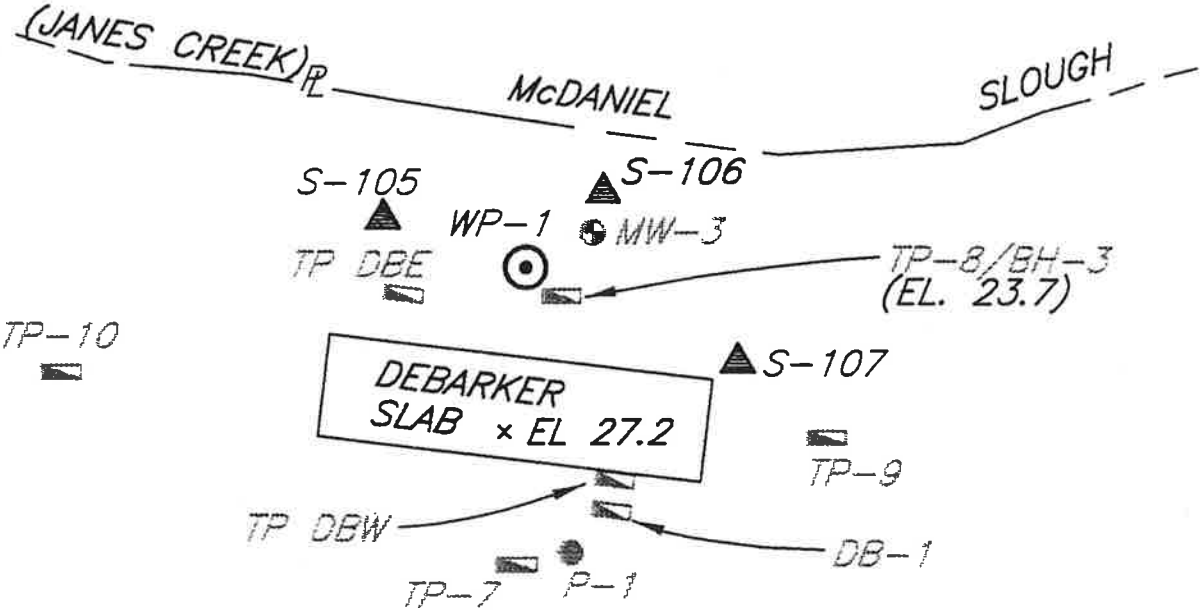
TP-10 — PREVIOUS SOIL SAMPLE LOCATION

MW-3 — EXISTING MONITORING WELL

WP-3 — WELL POINT LOCATION

P-1 — EXISTING PIEZOMETER LOCATION

S-107 — SOIL SAMPLE LOCATION



1"=50'

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

DB AREA SAMPLING LOCATIONS
JUNE, 1996

SHN 930121.100
JULY, 1996

SHN

FIGURE 5

930121S2

Fuel Tank Area (FTA) soil gas survey information confirmed lateral and vertical extent of soil contamination, as previously documented, sufficient for remedial action (overexcavation). No soil samples were collected at this location for analytical purposes. Field screening results of the organic vapor analyzer (OVA) are presented in Table 2. Results are presented as parts per million (ppm), using methane gas as the reference gas in the OVA.

Table 2. Soil Gas Survey Results

Location	Depth (ft.)	OVA Result (ppm)
SG-1	1	200
SG-2	3	75,000
SG-3	3	560
SAG-4	3	8
SG-5	3	80
SG-6	3	0.4
SG-7	3	1.2
SG-8	3	6.5

Vehicle Maintenance Area (VM) test pits included S-101, S-102, S-103, and S-104. Soil was generally 3 to 4 feet of rocky fill over native silt. Detectable levels of diesel and motor oil range petroleum hydrocarbons (TPHD, TPHMO, respectively), were found in the near surface (1ft. depth) soil samples with nondetectable to elevated levels of the same constituents found at depth (<4 ft.). This condition probably reflects historic site operations of oiling areas for dust control (deep area prefill), and upper areas of vehicle maintenance operations and traffic. Lateral and vertical extent of contamination are defined sufficiently for remedial action.

Debarker Area (DB) test pits included S-105, S-106, and S-107. Additionally, the initial excavation for WP-1, adjacent to the eastern, lower concrete slab footing, uncovered an old wood timber lined pit with oil stained soil and a used drum of hydraulic/waste oil (that will be discussed in a later section). A small release occurred from the drum during its removal. Soil was silt loam surface soil transcending to clayey silt/silty clay at the timber pit depth (3-4 ft). Test pits S-105 and S-106 indicated low level to nondetectable levels of TPHD and TPHMO. Test pit S-107, located in a historic demolition area, indicated higher levels of TPHMO and elevated lead (29 mg/kg) and zinc (160 mg/kg). Extent of lateral and vertical soil contamination has been determined sufficient for remedial action.

General Site Area test pits were located to augment previous general site soils information. Log deck area samples (S-112, S-113) indicated nondetectable levels of the target contaminants. Test pits in the southern portion of the site, west to east (S-110, S-109, S-108, and S-111), indicate shallow (6 inches), low level to nondetectable, varying diesel and motor oil range petroleum hydrocarbon contamination of the soil. Soil samples collected at depth (48 inches) were all nondetectable for the target contaminants. Thus, the "working" surface of the

operations area has been impacted by equipment operations. Any future development plans should address the potential for low level surficial soil contamination and mitigation alternatives (land use dependent).

Drainage Ditch soil samples (SD-1, SD-2) were collected from or very near the flowline of the existing railroad drainage ditch, just onto ERS property. ERS property surface runoff is generally prevented from draining to this ditch by site topography and the earthen berm separating the ditch from ERS remainder property. Detectable levels of diesel and motor oil range petroleum hydrocarbon soil contamination were found in the shallow (4 to 6 inches) depth sample locations.

Groundwater Sampling Results and Discussion

Groundwater samples were collected from the newly installed well points on June 25 and 26, 1996 in conformance with the work plan. Well installation permits approved by HCEHD are included in Appendix E. Table 1 summarizes the analytical results, and Figures 3, 4, and 5 show the sampling locations.

WP-1 (Debarker Area) Constituents of concern detected were TPHD (3,800 ug/L), and dissolved Zinc (0.090 mg/L). Zinc is below the California Maximum Contaminant Level (MCL) for drinking water standards. This result indicates that any groundwater contamination is localized between WP-1 and MW-3, as MW-3 has shown nondetectable for TPHD in previous samplings, and is directly downgradient of WP-1.

WP-2 (Vehicle Maintenance Area) Toluene (0.74 ug/L) was detected, along with dissolved Nickel (0.027 ug/L) and Zinc (0.12 ug/L). No other constituents of concern were detected.

WP-3 (Fuel Tank Area) TPHG (62 ug/L), TPHD (1300 ug/L), and Toluene (1.7 ug/L) were detected, along with dissolved Zinc (0.30 ug/L). No other constituents of concern were detected. This well point was located within the area previously indicated for soil overexcavation, and the area where groundwater is monitored by monitoring well MW-2.

Well Elevations, Groundwater Flow Direction, and Gradient

During the week of June 26, 1996, the newly installed monitoring wells were surveyed by a California licensed surveyor for top of casing elevations to the nearest 0.01 foot, ground surface elevations, and horizontal locations. Elevations were surveyed to a mean sea level (MSL) reference datum.

Based on surveyed elevations and water levels measured on June 25 (MW-1, MW-2, MW-3, MW-4, &P-1) and June 26 (WP-1, WP-2, &WP-3), 1996, groundwater elevations were calculated as shown in Table 3.

Table 3 June 1996 Groundwater Elevations (Feet)

Well Location	Depth to Groundwater (below top of casing)	Groundwater Elevation (MSL)
MW-1	6.92	19.77
MW-2	7.03	19.01
MW-3	12.03	12.42
MW-4	8.56	19.16
P-1	10.64	17.93
WP-1	13.01	12.41
WP-2	8.40	18.94
WP-3	5.08	18.95

Shallow, unconfined to semi-confined groundwater is present in the alluvial deposits. Based on groundwater elevations measured in wells MW-1, MW-2, MW-4, and piezometer P-1 on June 25, 1996, shallow groundwater beneath the site flows predominantly toward the east-southeast at an average gradient of 0.0062 feet per foot (see Figure 3). Confined groundwater is present in deeper alluvial deposits (encountered in well MW-3), and is separated from the shallow groundwater by low permeability silty clay and very clayey silt.

Disposition of Excavated Soil, Probe Holes, and Purge Water

Soil excavated from the test pits was replaced into the test pits from which it came. Soil gas probe holes and well point holes were filled with bentonite pellets/powder and charged with distilled water to construct a seal. The minor amounts of purge water and decontamination rinse water generated were put on the existing concrete slab, in a contained area, and allowed to evaporate. All water had evaporated prior to closure of each day's operations.

DEBARKER AREA INTERIM OVEREXCAVATION

SHN coordinated and discussed interim overexcavation of the debarker area, old oil drum, and contaminated soil with HCDEH. SHN, on July 5, 1996, with Hake Construction, removed approximately 3 to 4 cubic yards of contaminated soil, the old oil drum, and an old oil filter, from the test pit excavation area in which the drum was originally (June 25) found. The excavated soil was placed on 10 mil plastic sheeting resting on the north end of the concrete debarker slab. The bottom end of the plastic was folded up and a 10 mil plastic cover was put over the soil, forming a weather secure cell. Temporary cyclone fencing was put around the perimeter of the cell, and the fence and cell were labeled with identification information. The soil pit was backfilled with area soil. ERS personnel, on July 8, 1996, installed more permanent wire fencing around the soil cell for security purposes. The soil will be remediated with the excavated soil from the proposed overexcavation areas.

SITE SECURITY

On July 2, ERS personnel installed steel, lockable, security gates at the two Foster Avenue driveways entering the site. This will reduce the incidence of vehicular trespass onto the property.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations relative to project site groundwater characterization are SHN's interpretation of data collected during field investigative work.

Three areas of concern, relative to soil and/or groundwater contamination with petroleum hydrocarbon substances have been documented. The fuel tank/septic tank area, the vehicle maintenance area, and the log debarking facility are documented as areas of soil and/or groundwater contamination. For reference purposes, the term "Hazardous" is as defined by the California Code of Regulations Title 22, Chapter 11, (CCR-Title 22). Conditions of soil and groundwater contamination include, but are not limited to, the following:

1. Metals dissolved in the site groundwater, documented to date, are not hazardous and do not pose a health risk for potential potable water uses, if any.

2. Soils remedial action should proceed in 1996, weather permitting, upon regulatory approval of the SHN, July 1996 Remedial Action Plan. Remedial action proposed is excavation, transfer off site to Mill A, and, at a minimum, winterization at Mill A, of the identified contaminated soil. The excavation work would minimize potential contaminant mobilization in site groundwater if another normal wet winter is realized on the North Coast.

3. Future groundwater investigation should be contingent upon results of the remaining quarterly monitoring events, scheduled to be conducted in September 1996 and December 1996, and proposed soil excavation operations.

APPENDIX L

REFERENCES

California Regional Water Quality Control Board. (August 1990). Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks. Santa Rosa: RWQCB.

---. (February 24, 1992). "Appendix A," Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks. Santa Rosa: RWQCB.

SHN Consulting Engineers & Geologists, Inc. (June 1993). Phase I Environmental Site Assessment, 2000 Foster Avenue, Arcata, California, AP #505-161-11. (Prepared for North Coast Export Company. Eureka: SHN.

---. (January 1995). Initial Report of Findings for 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11 Formerly Specialty Mill. Eureka: SHN.

---. (May 1995). Work Plan for Hydrogeologic Investigations and Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Humboldt County AP# 505-161-11, Arcata, CA. Eureka: SHN.

---. (March 1996). Work Plan for Continued Subsurface Investigation and Initial Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Arcata, CA, Humboldt County AP# 505-161-11. Eureka: SHN.

APPENDIX A

CORRESPONDENCE

APPENDIX L

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501

(707) 445-6215
FAX (707) 441-5699

2 July 1996

RECD JUL 03 1996

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the March 1996 *Work Plan for Continued Subsurface Investigation and Initial Remedial Action* and the May 1996 *Report of Waste Discharge* prepared by SHN Consulting Engineers and Geologists (SHN).

A. Work Plan

Verbal approval of the work plan for further investigation was given in a telephone conversation with Martin Lay of SHN on 19 June 1996 with the following understandings.

- Soil cuttings are to be placed in drums or stored in a secured area. All drums stored on site are to be adequately secured from public access. We understand that ERS is fabricating security gates for the site.

- Soil samples will be collected in liners mounted in driven samplers as opposed to collected from unlined samplers to prevent loss of volatiles.

- Samples collected at the Debarker Slab will include lead analysis.

B. Remedial Actions

Remedial actions are addressed in both documents. We have some concerns that will need to be addressed prior to beginning remedial action at the Arcata Specialty Mill site and the proposed treatment facility at the Fortuna Metropolitan Mill 'A' facility. A final Remedial Action Plan (RAP) for treatment of the soil will need to be submitted to the HCDEH for review once the Report of Waste Discharge (ROWD) is approved by the Regional Board. We understand SHN will prepare a remedial action plan once the current investigation is complete. Our comments below are intended to provide assistance in development of the RAP and shorten the review and comment period.

Initial Remedial Action

- The Initial Remedial Action Plan (IRAP) has identified overexcavation as the chosen remedial alternative with off-site treatment of contaminated soil. The specific off-site treatment method is identified and discussed in the ROWD. The ROWD will need to be approved by the NCRWQCB prior to transporting contaminated soil to the Metropolitan Mill 'A' facility.

- Confirmation sampling in the Debarker Slab will need to include lead analysis.

- Cleanup levels need to be established prior to beginning overexcavation of the contaminated areas. We understand the proposed primary use of the property is redevelopment as residential with a portion of the property adjacent to Janes Creek (McDaniel Slough) designated as riparian habitat. Cleanup levels need to be protective of human and environmental health.

Report of Waste Discharge and Soil Treatment

- As noted above, the ROWD needs to be approved by the NCRWQCB prior to beginning soil treatment.

- The resolution of Figure 3 in our copy of the ROWD, illustrating the location of the treatment facility at the Metropolitan Mill 'A' facility, is extremely poor. The resolution of this figure needs to be upgraded in the RAP.

- The ROWD states the tilling equipment will be cleaned before leaving the equipment area but does not address cleaning equipment between windrows,this indicates that contaminated soil may be tracked by equipment in to the area between the windrows, where it may come in contact with native soil and run-off waters. We understand water from the run-off collection system will be directly discharged from the treatment area, apparently without sampling or treatment. Run-off waters need to be contained and sampled prior to discharge. Contaminated run-off waters may need treatment before discharge.

- We understand the proposed treatment area is unpaved. Please describe what precautions will be taken to prevent puncture of the liner by equipment. We recommend a layer of sand be placed beneath and on top of the plastic liner.

- Preservation of containment berm integrity during equipment entrance and exits needs to be addressed.

- The treatment area needs to be adequately secured from unauthorized entry.

- Dust and moisture control need to be addressed in the RAP. A permit may be required from the North Coast Unified Air Quality Management District during treatment. Please contact the NCUAQMD at 707.443.3093.

- We understand soil from the Metropolitan Mill 'A' fueling area will also be treated in this area. Please provide information on contaminant type, concentrations and soil types from this area.

- A significant portion of the soil proposed for treatment are described as silt and clay. This may slow remedial progress. SHN proposes to add sawdust as a bulking agent and nutrient agents to the amend the soil during treatment. This appears appropriate. The RAP should address the nutrient formulation, anticipated frequency of aeration (tilling), nutrient, bulking agent and moisture addition.

Monitoring Plan

- SHN states that samples will be collected to assess treatment effectiveness. The specific methods of how effectiveness of biotreatability will be determined need to be adequately addressed. A detailed remedial progress plan with milestone report periods needs to be developed for the proposed land treatment unit which should include (but not necessarily limited to):
  - constituent concentrations and reduction;
  - biodegration conditions;
  - vapour emission monitoring;
  - run-off water sampling;
  - Soil pH and moisture content;
  - bacterial populations;
  - nutrient concentrations and needs.

- Target cleanup levels and disposition of the treated soils need to be addressed. Previous experience has indicated that reduction of contaminant concentrations for TPH greater than 95 percent may be difficult to achieve. This eventuality should be considered when evaluating ultimate disposition of treated soil. For example, treated soil may be placed beneath a paved log deck. Your consultant can provide you further guidance on this subject.

- Verification samples should also be taken from beneath the windrows once treatment is completed. Your consultant can provide additional guidance on this subject.

Please submit the remedial action plan **by August 30, 1996.** I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata

12518.003/697

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

15 November 1995

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the August 1995 *Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue* prepared by SHN Consulting Engineers and Geologists (SHN). I apologize for the delay in responding to the report. I have reviewed the report and have the following comments.

1. The report states that soil samples were not collected from piezometer P-1 and that the piezometer construction method differed from that proposed in the workplan. Please clarify the rationale for deviating from the approved workplan methodology.

2. Water samples indicate the presence of chromium above maximum contaminant levels (MCL) in well MW-4. It is unclear whether this represents dissolved chromium. Future sampling events should include analysis for dissolved chromium.

3. The report does not identify background concentrations for chromium, nickel and zinc. This needs to be addressed.

4. Water and/or sediment samples were not collected from the drainages adjacent to the property in this phase of the investigation. I understand you have some concerns regarding impacts to water and soil in the drainages from non-mill operations. I will be pleased to discuss this with you at our meeting on 28 November 1995.

5. We concur with SHN's recommendation for further assessment of the site in the vicinity of the septic system. The following areas also need some further definition prior to selection of a soil remediation alternative:

   - Shallow soil in the vicinity of TP-DBE and MW-3 east of the debarker slab, and soil south of TP-8.
   - Soil north and west of TP-4, 5 & 6 in the vehicle maintenance area (including identification of large single peaks in the motor oil range noted by the laboratory).
   - Soil contamination in the vicinity of TP-FTA 1, south of the former fuel tank area.
   - The area in the vicinity of TP-16 and east of the green chain.

Monitoring Program

We concur with SHN's conclusion that additional groundwater monitoring is necessary at the site. The monitoring program is to consist of monthly depth to groundwater and quarterly groundwater analytical sampling for TPH as gasoline, diesel, and motor oil; the aromatic hydrocarbons benzene, toluene, xylenes, and ethyl benzene, dissolved metals (chromium, lead, nickel and zinc); and tannins and lignins. Quarterly reports are to include monthly groundwater gradient maps, depth to groundwater, groundwater elevation, and analytical laboratory data in a tabular format. The monitoring program should be implemented immediately.

Reporting Period	Due Date
December, January, February	March 15
March, April, May	June 15
June, July, August	September 15
September, October, November	December 15

I will be pleased to discuss these items with you and your consultant at our meeting on 28 November 1995. I look forward to working with you in this matter. Please call me at (707) 441-5690, if you have any questions.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
12518.003

TABLE 1
PROPOSED SAMPLING PROGRAM

TEST LOCATION ID	CONSTITUENTS							
	TPHD	TPHMO	TPHG	BTEX	METALS[a]	Pb	EPA 8270	REMARKS
SOIL								
S-101	x	x			x[b]			VM Area
S-102	x	x[c]						" "
S-103	x	x						" "
S-104	x	x					x[b]	" "
S-105	x	x			x			DB Area
S-106	x	x[c]			x			" "
S-107	x	x	x	x		x		" "
S-108	x	x						Septic Tank Greenchain Area
S-109	x	x				x[b]	x[b]	" "
S-110	x	x						" "
S-111	x	x						General Site
S-112	x	x						" "
S-113	x	x						" "
SD-1	x	x						Drainage Ditch South
SD-2	x	x						" "
Groundwater								
WP-1	x	x	x	x		x		FTA Area
WP-2	x	x[c]	x	x	x			VM Area
WP-3	x	x	x	x	x			DB Area

[a] Metals Cd, Cr, Ni, Zn, Pb--Total in soil, dissolved in groundwater
[b] Run on worst case sample of TPHMO from sample area
[c] Quality Control Sample
TPHD = Total Petroleum Hydrocarbons, Diesel
TPHMO = Total Petroleum Hydrocarbons, Motor Oil
TPHG = Total Petroleum Hydrocarbons, Gasoline
BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes, EPA Method 8020 modified

APPENDIX L

APPENDIX B

SUMMARY OF LABORATORY RESULTS
PREVIOUS WORK

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl-benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-FTA1	2.0	02/17/94	500 (a)	--	19 (e)	--	<0.03	<0.03	<0.03	<0.03	--	--	--	--	--	12
TP-FTA1	5.0	02/17/94	250 (a)	--	220 (e)	--	<0.5 (g)	<0.5 (g)	<0.5 (g)	<0.5 (g)	--	--	--	--	--	8.0
TP-ST	2.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	82	98	61	8.4
TP-ST	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	99 (i)	110	62	9.1
TP-VM4	2.0	02/17/94	--	140 (h)	--	82	--	--	--	--	--	<1.0	25	29	38	20
TP-VM4	4.0	02/17/94	--	<10	--	50	--	--	--	--	--	<1.0	76	88	74	9.7
TP-DBW	2.0	02/17/94	--	130 (h)	--	82	--	--	--	--	--	<1.0	25	28	30	4.8
TP-DBW	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	80	87	58	6.4
TP-DBE	2.0	02/17/94	--	--	--	58	--	--	--	--	--	<1.0	22	45	270	51
TP-DA1	2.0	02/17/94	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
TP-DA2	2.0	02/17/94	--	--	--	95	--	--	--	--	--	--	--	--	--	--
TP-1	1.5	05/17/94	19 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	50 (f)
TP-1 (DUPE)	1.5	05/17/94	--	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	29 (f)
TP-1	4.0	05/17/94	16 (a)	--	3.6 (e)	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	7.6
TP-2	1.0	05/17/94	1.9 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	14
TP-2	4.0	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.0
TP-3	1.0	05/17/94	160 (d)	--	19	--	<0.005	<0.005	<0.10 (g)	<0.10 (g)	--	--	--	--	--	5.3
TP-3	3.2	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	10
TP-3	4.5	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.1
TP-4	2.0	05/17/94	8.5 (d)	200	--	--	--	--	--	--	--	--	--	--	--	--
TP-4	4.5	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	1.3	05/17/94	41 (d)	510	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	4.4	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-6	1.7	05/17/94	24 (d)	150	--	--	--	--	--	--	--	--	--	--	--	--
TP-6 (DUPE)	1.7	05/17/94	5.6	48	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX L

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-6	4.3	05/17/94	49 (d)	820	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	1.2	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	4.9	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	2.7	05/17/94	280 (d)	3400	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	4.5	05/17/94	270 (d)	1700	<1.0	--	<0.050	<0.050	<0.050	<0.025	<0.050	--	--	--	--	--
TP-9	1.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	10
TP-9	4.8	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	6.4
TP-10	1.1	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-10	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	4.3	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	2.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	4.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	1.4	05/18/94	<5.0	210	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	1.7	05/18/94	17 (d)	160	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	4.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	1.1	05/18/94	3.0 (d)	35	--	--	--	--	--	--	--	--	--	--	--	--
TP-17 (DUPE)	1.1	05/18/94	3.2 (d)	28	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	3.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX L

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	**8270	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MW-1	1 - 1.5	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	1.5 - 2	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	0.5 - 1	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	51	62	60	11
MW-1	9.5 - 10	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	9 - 9.5	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8.5 - 9	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	72	83	77	10
MW-2	3.5 - 4	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-2	3 - 3.5	06/21/95	13 (b)	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2.5 - 3	06/21/95	--	--	--	--	--	--	--	--	--	--	--	--	--	18
MW-3	1.5 - 2	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	1 - 1.5	06/22/95	<1.0	24	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	0.5 - 1	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	27	30	65	22
MW-3	7 - 7.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	6.5 - 7	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6 - 6.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	79	110	65	9.5
MW-3	7.5 - 7.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
MW-3	8 - 8.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-3	17 - 17.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	16.5 - 17	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	16 - 16.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	88	110	71	11
MW-4	4.5 - 5	06/22/95	--	--	1.2 (j)	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-4	4 - 4.5	06/22/95	38 (a)	26	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5 - 5.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-4	3.5 - 4	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	74	90	74	10
MW-4	5.5 - 5.75	06/22/95	--	--	--	3600	--	--	--	--	--	--	--	--	--	--
VM-1	1.5	06/22/95	--	--	--	82	--	--	--	--	--	--	--	--	--	--
DB-1	1.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--

APPENDIX L

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	**8270/ 8080	Benzene	Toluene	Ethyl Benzene	Xylenes	*601/ 602	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)	Tannin & Lignin
Groundwater Samples		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
BH-1	05/18/94	67 (b)	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.043	--
BH-2	05/18/94	<50	<500	--	--	--	--	--	--	--	<0.010	0.047	0.077	0.031	<0.020	-
BH-3	05/18/94	480 (c)	1800	<50	--	<1.0	<1.0	<1.0	<0.50	<1.0	<0.010	0.023	0.034	<0.020	<0.020	--
BH-4	05/18/94	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	06/28/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.022	0.052	0.03	<0.020	0.43
MW-1 (k)	02/23/96	<50	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	0.049	<0.020	0.88
MW-2	06/29/94	74 (b)	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.036	1.1
MW-2 (k)	02/23/96	180	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	<0.020	<0.020	1.1
MW-2 (QC-2)	02/23/96	--	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--
MW-3	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3
MW-3 (k)	02/23/96	<50	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	0.031	<0.020	4.5
MW-3 (QC-1)	02/23/96	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.062	0.11	0.061	<0.020	1.7
MW-4 (QC-1)	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.066	0.11	0.057	<0.020	1.8
MW-4 (k)	12/20/95	--	--	--	--	--	--	--	--	--	<0.010	<0.0050	<0.020	0.020	<0.020	--
MW-4 (k)	02/23/96	<50	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	0.17	<0.020	2.1

APPENDIX L

-- = Not tested
TPHIR = Total Petroleum Hydrocarbons, analyzed using infrared spectrophotometry
** For a full list of EPA 8010, 8020, 601 and 602 constituents, and detection limits see North Coast Laboratories results.*
*** For a full list of EPA 8270 and 8080 constituents, and detection limits see American Environmental Network Laboratories results.*
DUPE/ QC = Duplicate sample for laboratory quality control
(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
(e) Sample does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In the labs judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The result reported represents the amount of material in the gasoline range only.
(f) Due to the high level of lead present, this sample and its duplicate sample were analyzed by EPA 6010. The difference in the lead results may be due to sample non-homogeneity.
(g) The detection limits were raised due to matrix interference.
(h) Sample contains large individual peaks in the motor oil range, in addition to the motor oil present. All motor oil results represent the amount of material in the motor oil range of molecular weights only.
(i) The sample from TP-ST at 5.0' was also tested for Soluble Chromium, the result was 0.56 mg/L. The Soluble Threshold Limit Concentration (STLC) for Chromium = 5.0 mg/L.
(j) Sample does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.
(k) Metal concentration represents dissolved metals fraction.

APPENDIX C

JUNE 1996 SUBSURFACE EXPLORATION LOGS

APPENDIX L

APPENDIX L

HOLE NUMBER S-101

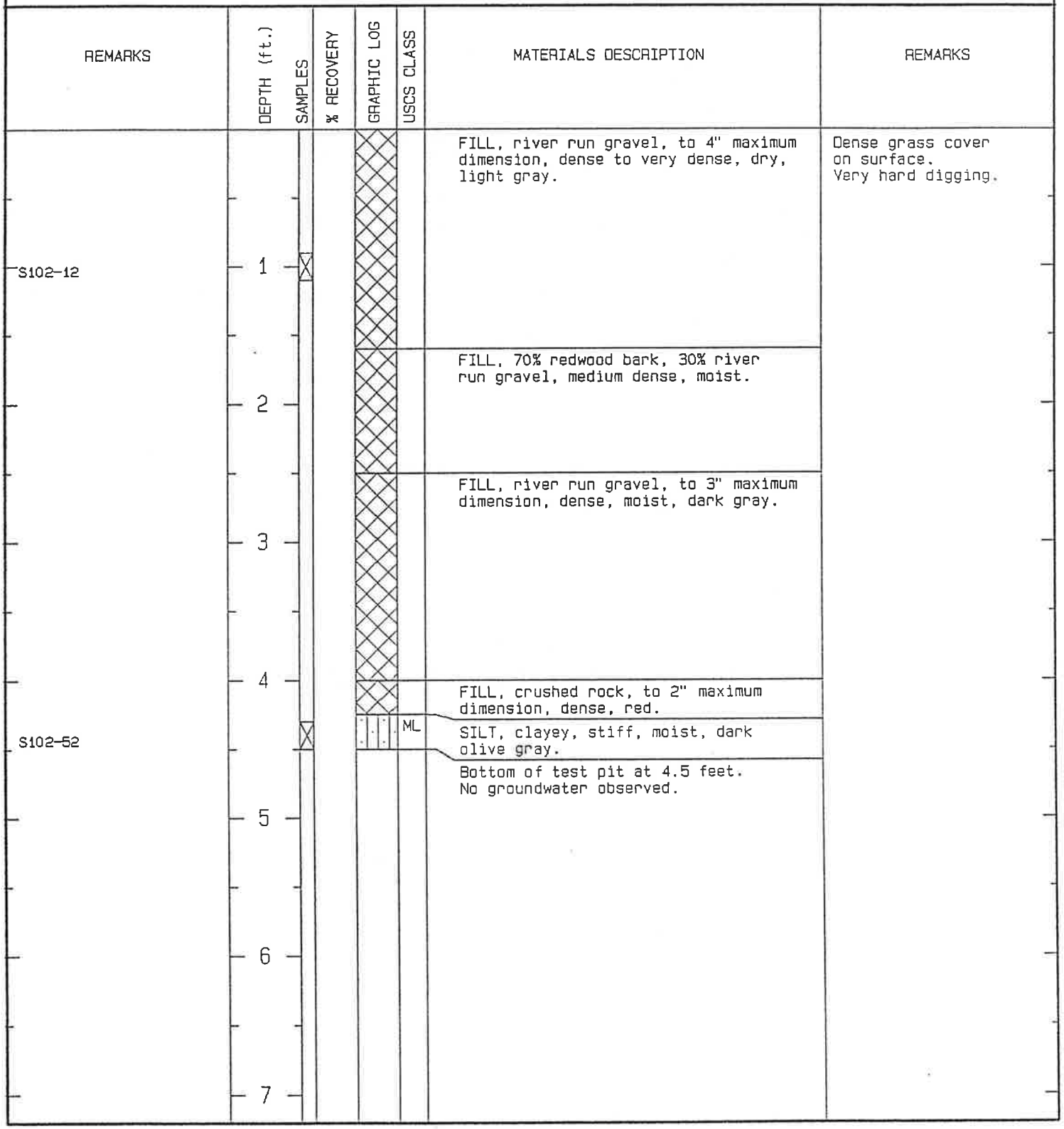
PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION VM-SW
DATE DRILLED 6/25/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY ML
TOTAL DEPTH OF HOLE 5.3ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
						FILL, gravel, sandy, medium dense to loose, dry, brownish gray, friable, gravel to 1.5" maximum dimension, abundant roots.	Thick grass cover on surface.
S101-6-8	1					FILL, river run gravel to 3" maximum dimension, poorly graded, dense, dry, brownish gray, occasional roots.	
	2					FILL, gravel, poorly graded, sandy, with wood waste, dense, moist, brown, gravel to 2" maximum dimension.	
S101-36	3				ML	SILT, clayey, fine sandy, stiff to very stiff, moist, dark gray, slightly plastic, blocky.	
	4				ML	SILT, clayey, stiff, moist to wet, olive gray, plastic.	
	5					Bottom of test pit at 5.3 feet. No groundwater observed.	
	6						
	7						

APPENDIX L

HOLE NUMBER S-102

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION NW VM Ramp Area
DATE DRILLED 6/25/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY ML
TOTAL DEPTH OF HOLE 4.5ft.



APPENDIX L

HOLE NUMBER S-103

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION VM Area (North)
DATE DRILLED 6/25/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY ML
TOTAL DEPTH OF HOLE 4.3ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S103-4-8	0					FILL, river run gravel, to 3" maximum dimension, poorly graded (80% >2"±), well rounded, sandy, very dense, dry, grayish brown.	Dense grass cover on surface.
	1					FILL, river run gravel, to 3" maximum dimension, poorly graded (80% >2"±), sandy, well rounded, dense to very dense, dry, gray.	
	2						
						Increased sand, ≈60% 2"± gravel.	
	3						
S103-42-46 (QA-1)					ML	SILT, clayey, stiff, moist, gray.	
	4						
						Bottom of test pit at 4.3 feet. No groundwater observed.	
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER S-104

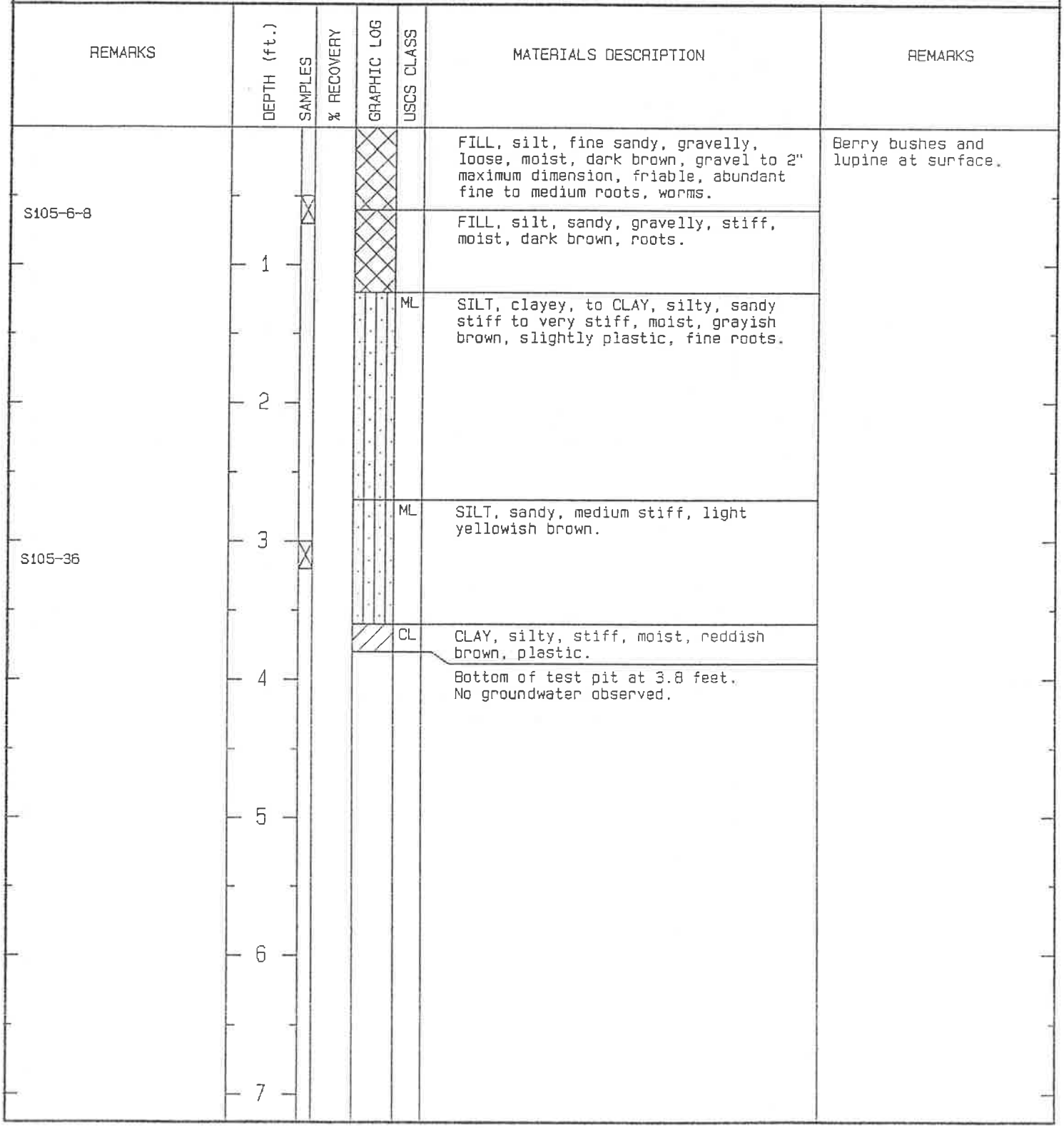
PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION N Mill-E-VM
DATE DRILLED 6/25/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY ML
TOTAL DEPTH OF HOLE 5.1ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
	0					FILL, river run gravel, to 2" maximum dimension, well graded, loose, dry brownish gray, roots.	Grass at surface.
S104-6-8	1					FILL, river run gravel, to 2" maximum dimension, well graded, medium dense, dry, brownish gray, roots.	
	2				ML	SILT, sandy, stiff, moist, brown, fine sand.	
S104-42	3				ML	SILT, sandy, stiff, moist, yellowish brown.	
	4				SM	SAND, silty, dense, moist, light yellowish brown, medium sand.	
	5					Bottom of test pit at 5.1 feet. No groundwater observed.	
	6						
	7						

APPENDIX L

HOLE NUMBER S-105

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Debarker NE area
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY ML
TOTAL DEPTH OF HOLE 3.8ft.



APPENDIX L

HOLE NUMBER S-106

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 4.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S106-6	0					FILL, silt, sandy, loose, moist, medium brown with reddish brown inclusions, medium to fine sand, some wood and metal debris.	
	1						
	2				ML	SILT, clayey, very stiff, moist, gray with yellowish brown mottling, low plasticity.	
	3						
					ML	SILT, clayey, medium stiff, moist, light brown, low plasticity.	
S106-48 (QC-2)	4					Bottom of test pit at 4.0 feet. No groundwater observed.	
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER S-107

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 3.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S107-6	1	X				FILL, silt, sandy, with cobbles and gravel, very loose, moist, medium brown, well rounded cobbles and gravel.	
	2					Wood waste debris.	
	3					Bottom of test pit at 3.0 feet. No groundwater observed.	Concrete at 3', could not advance excavation.
	4						
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER S-108

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 4.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S108-6	0					FILL, gravel, silty, medium dense, moist, reddish brown; coarse, angular gravel.	Red rock base
	1				ML	SILT, stiff, moist, dark brown, low plasticity.	
	2						
	3				ML	SILT, clayey, sandy, medium stiff, moist, yellowish-brown with gray mottling, low plasticity.	
S108-48	4						
	5					Bottom of test pit at 4.5 feet. No groundwater observed.	
	6						
	7						

APPENDIX L

HOLE NUMBER S-109

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 4.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
						FILL, gravel, silty, dense, moist, reddish-brown; coarse, angular gravel.	Red rock base
S109-6						FILL, gravel, silty, medium dense, moist, gray; coarse, rounded gravel.	River run gravel
	1				ML	SILT, stiff, moist, dark brown, low plasticity.	
	2						
	3				ML	SILT, clayey, sandy, medium stiff, moist, yellowish-brown with gray mottling, low plasticity.	
S109-4B	4					Bottom of test pit at 4.0 feet. No groundwater observed.	
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER S-110

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 4.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S110-6	1					FILL, gravel, silty, medium dense, moist, gray; coarse, well rounded gravel.	River run gravel
	2				ML	SILT, stiff, moist, dark brown, low plasticity.	
	3				ML	SILT, clayey, sandy, medium stiff, moist, yellowish-brown with gray mottling, low plasticity.	
S110-4B	4					Bottom of test pit at 4.0 feet. No groundwater observed.	
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER S-111

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 4.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S111-6	0					FILL, gravel, silty, sandy, loose, moist, brown, abundant root mass; well rounded, coarse to fine gravel.	
	1				ML	SILT, stiff, moist, dark brown, low plasticity.	
	2						
	3				ML	SILT, clayey, sandy, medium stiff, moist, yellowish-brown with gray mottling, low plasticity, fine sand.	
S111-48	4						
						Bottom of test pit at 4.5 feet. No groundwater observed.	
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER S-112

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 4.5ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S112-6	0					FILL, gravel, silty, sandy, with minor fine cobbles, medium dense, moist, light brown.	
	1						
	2					Moisture increasing with depth.	
	3				ML	SILT, clayey, soft, moist, bluish-gray, low plasticity.	
S112-48	4						
	5					Bottom of test pit at 4.5 feet. No groundwater observed.	
	6						
	7						

APPENDIX L

HOLE NUMBER S-113

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION Arcata, CA
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Backhoe - 24" Bucket
LOGGED BY MF
TOTAL DEPTH OF HOLE 4.0ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
S113-6	0				ML	SILT, hard, moist, dark brown, low plasticity.	
	1						
	2						
	3				ML	SILT, sandy, clayey, medium stiff, moist, yellowish-brown with minor gray mottling, fine sand, low plasticity.	
S113-48	4					Bottom of test pit at 4.0 feet. No groundwater observed.	
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER SD-1 (Drainage Ditch)

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION W Prop 20' N RR, 2' N ditch on bank
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Samoled
EXCAVATION METHOD Shovel
LOGGED BY ML
TOTAL DEPTH OF HOLE 0.4ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
SD-1	0	X			ML	SILT, sandy, clayey, medium stiff, moist, grayish brown, fine to coarse sand, abundant roots.	Grass and dense vegetation (roses, berry bushes, etc.) at surface. No water in ditch.
						Bottom of test pit at 0.4 feet. No groundwater observed.	
	1						
	2						
	3						
	4						
	5						
	6						
	7						

APPENDIX L

HOLE NUMBER SD-2 (Drainage Ditch)

PROJECT North Coast Exports, Specialty Mill
JOB NUMBER 930121.100
LOCATION E Prop - N. ditch N side 20' off RR
DATE DRILLED 6/26/96
GROUND SURFACE ELEVATION
SAMPLER TYPE Hand Sampled
EXCAVATION METHOD Shovel
LOGGED BY ML
TOTAL DEPTH OF HOLE 0.4ft.

REMARKS	DEPTH (ft.)	SAMPLES	% RECOVERY	GRAPHIC LOG	USCS CLASS	MATERIALS DESCRIPTION	REMARKS
SD-2		X			ML	SILT, clayey, medium stiff, moist, grayish brown, friable, roots.	Densely vegetated at surface. No water in ditch.
						Bottom of test pit at 0.4 feet. No groundwater observed.	
	1						
	2						
	3						
	4						
	5						
	6						
	7						

APPENDIX D

JUNE 1996 LABORATORY ANALYTICAL REPORTS

APPENDIX L

NORTH COAST LABORATORIES LTD.

DATE: July 10, 1996

REPORT TO: Selvage, Heber and Nelson
812 West Wabash Avenue
Eureka, CA 95501

REC'D JUL 18 1996

ATTENTION: Marty Lay

NCL: 96-06-580

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ADDENDUM TO CHEMICAL EXAMINATION REPORT

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PARAMETER	NOTATIONS
TPHC Diesel	Sample 01A contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of degraded diesel. This indicates the presence of degraded diesel plus an oil heavier than diesel. Samples 03A, 04A and 31B contain material similar to degraded or weathered diesel oil. Samples 05A, 12A, 16A, 19A, 22A and 27A contain material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. Sample 23A contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. Samples 08A and 33B were diluted due to the amount of material in the motor oil range. All diesel results reported represent the amount of material in the diesel range of molecular weights only.
TPHC Motor Oil	Samples 01A, 02A, 03A, 05A, 08A, 11A, 16A, 17A, 19A, 21A, 22A and 23A do not have the typical pattern of fresh motor oil. Sample 04A was diluted due to the the large amount of material in the diesel range. All motor oil results reported represent the amount of material in the motor oil range.
TPHC Gasoline	Sample 31C does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.

NCL: 96-06-580

BTXE	A surrogate was not added to the soil sample analysis.
Metals	The reporting limit for cadmium was raised due to matrix interference.

Laboratory Supervisor(s) QA Officer Jesse G. Chaney, Jr. Laboratory Director

NORTH COAST LABORATORIES
5680 West End Road • Arcata, California 95521 • 707-822-4649 • FAX 707-822-6831

APPENDIX L

NORTH COAST LABORATORIES LTD.

Date: 07/10/96 REPORT

REPORT TO: Selvage, Heber and Nelson
812 West Wabash Avenue
Eureka, CA 95501

Attn: Marty Lay

WORK ORDER 96-06-580

INVOICE # 60052582

WORK ID: 930121.00/Spec. Mill/NoCoEx

REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Officer

Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	S102-12
02	S102-52
03	QA-1
04	S103-43
05	S103-4-8
06	S103-42-46
07	S104-42
08	S104-6-8
09	S113-48
10	S113-6
11	S-101-36
12	S-101-6-8
13	S-112-06
14	S-112-48
15	S-105-36
15	S-105-36
16	S-105-6-8
16	S-105-6-8
17	S-106-6
17	S-106-6
18	S-106-48
18	S-106-48
19	S-107-6
19	S-107-6
19	S-107-6
20	QC-2

Comments:

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

APPENDIX L

SAMPLE IDENTIFICATION

Fraction	Sample Description
21	SD-2
22	SD-1
23	S-111-6
24	S-111-48
25	S-108-6
26	S-108-48
27	S-109-6
28	S-109-48
29	S-110-6
30	S-110-48
31	WP-3
31	WP-3
31	WP-3
32	WP-2
32	WP-2
32	WP-2
33	WP-1
33	WP-1
34	Blank
35	Lab. Control Sample
36	Blank
37	Lab. Control Sample
38	Travel Blank

APPENDIX L

SAMPLE ID: S102-12 FRAC.: 01A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	12	1.0	ug/g	1.0	06/27/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	150	50	ug/g	5.0	06/27/96	07/08/96	EPA3550GCFID

SAMPLE ID: S102-52 FRAC.: 02A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/03/96	EPA3550GCFID
TPHC - Motor Oil	20	10	ug/g	1.0	06/27/96	07/03/96	EPA3550GCFID

SAMPLE ID: QA-1 FRAC.: 03A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	150	10	ug/g	10	06/27/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	37	10	ug/g	1.0	06/27/96	07/08/96	EPA3550GCFID

SAMPLE ID: S103-43 FRAC.: 04A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	950	50	ug/g	50	06/27/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	ND	500	ug/g	50	06/27/96	07/08/96	EPA3550GCFID

SAMPLE ID: S103-4-8 FRAC.: 05A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	1.8	1.0	ug/g	1.0	06/27/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	83	20	ug/g	2.0	06/27/96	07/08/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: S103-42-46 FRAC.: 06A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Chromium	72	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Nickel	88	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Zinc	73	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Lead	9.6	2.0	mg/kg	4.0		07/06/96	EPA 7421

SAMPLE ID: S104-42 FRAC.: 07A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/03/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/03/96	EPA3550GCFID

SAMPLE ID: S104-6-8 FRAC.: 08A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	2.0	ug/g	2.0	06/27/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	47	20	ug/g	2.0	06/27/96	07/08/96	EPA3550GCFID

SAMPLE ID: S113-48 FRAC.: 09A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

SAMPLE ID: S113-6 FRAC.: 10A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: S-101-36 FRAC.: 11A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	15	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-101-6-8 FRAC.: 12A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	2.5	1.0	ug/g	1.0	06/27/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	190	50	ug/g	5.0	06/27/96	07/08/96	EPA3550GCFID

SAMPLE ID: S-112-06 FRAC.: 13A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-112-48 FRAC.: 14A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-105-36 FRAC.: 15A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: S-105-36 FRAC.: 15B COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Chromium	64	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Nickel	87	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Zinc	54	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Lead	5.7	2.0	mg/kg	4.0		07/06/96	EPA 7421

SAMPLE ID: S-105-6-8 FRAC.: 16A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	1.4	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	29	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-105-6-8 FRAC.: 16B COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Chromium	38	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Nickel	47	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Zinc	59	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Lead	14	2.0	mg/kg	4.0		07/06/96	EPA 7421

SAMPLE ID: S-106-6 FRAC.: 17A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	30	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: S-106-6 FRAC.: 17B COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Chromium	43	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Nickel	47	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Zinc	66	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Lead	25	2.0	mg/kg	4.0		07/06/96	EPA 7421

SAMPLE ID: S-106-48 FRAC.: 18A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-106-48 FRAC.: 18B COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Chromium	85	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Nickel	110	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Zinc	80	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Lead	9.1	2.0	mg/kg	4.0		07/06/96	EPA 7421

SAMPLE ID: S-107-6 FRAC.: 19A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	1.2	1.0	ug/g	1.0	06/27/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	83	20	ug/g	2.0	06/27/96	07/08/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: S-107-6 FRAC.: 19B COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Chromium	47	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Nickel	56	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Zinc	160	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Lead	29	2.0	mg/kg	4.0		07/06/96	EPA 7421

SAMPLE ID: S-107-6 FRAC.: 19C COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
MTBE	ND	0.050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
m,p Xylene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Surrogate:					06/28/96	06/29/96	EPA 8020
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/28/96	06/29/96	EPA5030GCFID

SAMPLE ID: QC-2 FRAC.: 20A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

SAMPLE ID: SD-2 FRAC.: 21A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	15	10	ug/g	1.0	06/27/96	07/04/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: SD-1 FRAC.: 22A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	4.3	1.0	ug/g	1.0	07/01/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	190	100	ug/g	10	07/01/96	07/08/96	EPA3550GCFID

SAMPLE ID: S-111-6 FRAC.: 23A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	1.5	1.0	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	15	10	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-111-48 FRAC.: 24A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-108-6 FRAC.: 25A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-108-48 FRAC.: 26A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: S-109-6 FRAC.: 27A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	4.8	1.0	ug/g	1.0	07/01/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	180	10	ug/g	1.0	07/01/96	07/08/96	EPA3550GCFID

SAMPLE ID: S-109-48 FRAC.: 28A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID

SAMPLE ID: S-110-6 FRAC.: 29A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	07/01/96	07/08/96	EPA3550GCFID
TPHC - Motor Oil	58	20	ug/g	2.0	07/01/96	07/08/96	EPA3550GCFID

SAMPLE ID: S-110-48 FRAC.: 30A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	07/01/96	07/04/96	EPA3550GCFID

SAMPLE ID: WP-3 FRAC.: 31A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.020	mg/L	1.0		07/06/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		07/06/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		07/06/96	EPA 6010A
Zinc	0.30	0.020	mg/L	1.0		07/06/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		07/05/96	EPA 200.9

APPENDIX L

SAMPLE ID: WP-3 FRAC.: 31B COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	1300	50	ug/L	1.0	07/02/96	07/09/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/02/96	07/09/96	EPA3510GCFID

SAMPLE ID: WP-3 FRAC.: 31C COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/28/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
Toluene	1.7	0.50	ug/L	1.0		06/28/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
Surrogate:						06/28/96	EPA 602
cis-1,2-dichloroethene	111	N/A	% Rec	1.0		06/28/96	EPA 602
TPHC Gasoline/water	62	50	ug/L	1.0		06/28/96	EPA5030GCFID

SAMPLE ID: WP-2 FRAC.: 32A COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.020	mg/L	1.0		07/06/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		07/06/96	EPA 6010A
Nickel	0.027	0.020	mg/L	1.0		07/06/96	EPA 6010A
Zinc	0.12	0.020	mg/L	1.0		07/06/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		07/05/96	EPA 200.9

SAMPLE ID: WP-2 FRAC.: 32B COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	07/02/96	07/09/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/02/96	07/09/96	EPA3510GCFID

APPENDIX L

SAMPLE ID: WP-2 FRAC.: 32C COLLECTED: 06/25/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/28/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
Toluene	0.74	0.50	ug/L	1.0		06/28/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
Surrogate:						06/28/96	EPA 602
cis-1,2-dichloroethene	102	N/A	% Rec	1.0		06/28/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		06/28/96	EPA5030GCFID

SAMPLE ID: WP-1 FRAC.: 33A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.020	mg/L	1.0		07/06/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		07/06/96	EPA 6010A
Nickel	0.020	0.020	mg/L	1.0		07/06/96	EPA 6010A
Zinc	0.090	0.020	mg/L	1.0		07/06/96	EPA 6010A
Lead	ND	0.020	mg/L	4.0		07/05/96	EPA 200.9

SAMPLE ID: WP-1 FRAC.: 33B COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	200	ug/L	4.0	07/02/96	07/09/96	EPA3510GCFID
TPHC - Motor Oil	3800	2000	ug/L	4.0	07/02/96	07/09/96	EPA3510GCFID

SAMPLE ID: Blank FRAC.: 34A COLLECTED: N/A RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
MTBE	ND	0.050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Benzene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Toluene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Ethylbenzene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020

APPENDIX L

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
m,p Xylene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
o Xylene	ND	0.0050	ug/g	1.0	06/28/96	06/29/96	EPA 8020
Surrogate:					06/28/96	06/29/96	EPA 8020
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Chromium	ND	2.0	mg/kg	1.0		07/08/96	EPA 6010A
Nickel	ND	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Zinc	ND	5.0	mg/kg	1.0		07/08/96	EPA 6010A
Lead	ND	2.0	mg/kg	4.0		07/06/96	EPA 7421
TPHC Gasoline/soil	ND	1.0	ug/g	1.0	06/28/96	06/29/96	EPA5030GCFID
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	ND	1.0	ug/g	1.0	07/01/96	07/03/96	EPA3550GCFID
TPHC - Motor Oil	ND	10	ug/g	1.0	07/01/96	07/03/96	EPA3550GCFID

SAMPLE ID: Lab. Control Sample FRAC.: 35A COLLECTED: N/A RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/soil							EPA 8020
MTBE	67.5	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
Benzene	102	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
Toluene	103	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
Ethylbenzene	107	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
m,p Xylene	105	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
o Xylene	102	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
Surrogate:					06/28/96	06/29/96	EPA 8020
cis-1,2-dichloroethene	N/A	N/A	% Rec	1.0	06/28/96	06/29/96	EPA 8020
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	107	N/A	% Rec	1.0		07/08/96	EPA 6010A
Chromium	95.9	N/A	% Rec	1.0		07/08/96	EPA 6010A
Nickel	95.0	N/A	% Rec	1.0		07/08/96	EPA 6010A
Zinc	94.1	N/A	% Rec	1.0		07/08/96	EPA 6010A
Lead	95.5	N/A	% Rec	4.0		07/06/96	EPA 7421
TPHC Gasoline/soil	93.8	N/A	% Rec	1.0	06/28/96	06/29/96	EPA5030GCFID
TPHD & Motor Oil/soil							EPA3550GCFID
TPHC - Diesel	63.9	N/A	% Rec	1.0	07/01/96	07/03/96	EPA3550GCFID
TPHC - Motor Oil	93.3	N/A	% Rec	1.0	07/01/96	07/03/96	EPA3550GCFID

APPENDIX L

SAMPLE ID: Blank FRAC.: 36A COLLECTED: N/A RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		06/28/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		06/28/96	EPA 602
Surrogate:						06/28/96	EPA 602
cis-1,2-dichloroethene	103	N/A	% Rec	1.0		06/28/96	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	ND	0.010	mg/L	1.0		07/06/96	EPA 6010A
Chromium	ND	0.0050	mg/L	1.0		07/06/96	EPA 6010A
Nickel	ND	0.020	mg/L	1.0		07/06/96	EPA 6010A
Zinc	ND	0.020	mg/L	1.0		07/06/96	EPA 6010A
Lead	ND	0.050	mg/L	10		07/05/96	EPA 200.9
TPHC Gasoline/water	ND	50	ug/L	1.0		06/28/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	ND	50	ug/L	1.0	07/02/96	07/08/96	EPA3510GCFID
TPHC - Motor Oil	ND	500	ug/L	1.0	07/02/96	07/08/96	EPA3510GCFID

SAMPLE ID: Lab. Control Sample FRAC.: 37A COLLECTED: N/A RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	95.7	N/A	% Rec	1.0		06/28/96	EPA 602
Benzene	101	N/A	% Rec	1.0		06/28/96	EPA 602
Toluene	103	N/A	% Rec	1.0		06/28/96	EPA 602
Ethylbenzene	105	N/A	% Rec	1.0		06/28/96	EPA 602
m,p Xylene	109	N/A	% Rec	1.0		06/28/96	EPA 602
o Xylene	102	N/A	% Rec	1.0		06/28/96	EPA 602
Surrogate:						06/28/96	EPA 602
cis-1,2-dichloroethene	101	N/A	% Rec	1.0		06/28/96	EPA 602
EPA Metals(Cd,Cr,Ni,Zn)							EPA 6010A
Cadmium	77.2	N/A	% Rec	1.0		07/06/96	EPA 6010A
Chromium	97.8	N/A	% Rec	1.0		07/06/96	EPA 6010A
Nickel	100	N/A	% Rec	1.0		07/06/96	EPA 6010A
Zinc	97.7	N/A	% Rec	1.0		07/06/96	EPA 6010A
Lead	110	N/A	% Rec	10		07/05/96	EPA 200.9

APPENDIX L

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
TPHC Gasoline/water	97.2	N/A	% Rec	1.0		06/28/96	EPA5030GCFID
TPHD & Motor Oil/water							EPA3510GCFID
TPHC - Diesel	66.2	N/A	% Rec	1.0	07/02/96	07/08/96	EPA3510GCFID
TPHC - Motor Oil	114	N/A	% Rec	1.0	07/02/96	07/08/96	EPA3510GCFID

SAMPLE ID: Travel Blank FRAC.: 38A COLLECTED: N/A RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
BTX and E/water							EPA 602
MTBE	ND	5.0	ug/L	1.0		07/01/96	EPA 602
Benzene	ND	0.50	ug/L	1.0		07/01/96	EPA 602
Toluene	ND	0.50	ug/L	1.0		07/01/96	EPA 602
Ethylbenzene	ND	0.50	ug/L	1.0		07/01/96	EPA 602
m,p Xylene	ND	0.50	ug/L	1.0		07/01/96	EPA 602
o Xylene	ND	0.50	ug/L	1.0		07/01/96	EPA 602
Surrogate:						07/01/96	EPA 602
cis-1,2-dichloroethene	106	N/A	% Rec	1.0		07/01/96	EPA 602
TPHC Gasoline/water	ND	50	ug/L	1.0		07/01/96	EPA5030GCFID

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9606580

Attention: Marty Lay
Results & Invoice to: SHN Engineers
Address: 812 W. Wabash
Eureka, CA 95501
Phone: 441-8855
Copies of Report to:

PROJECT INFORMATION

Project Number: 930121.100
Project Name: Specialty Mill - NoCoEx
Purchase Order Number:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day ☒ STD (2–3 Wk) ☐ Other: ______ TW
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☒ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*		TPHD & MO	EPA 8270	Cd, Cr, Ni, Pb, Zn
					PRESERVATIVE	|	|	|
					CONTAINER	13	13	11
1	S102-12	6-25-96	1210	S	1	X		
2	S102-52	↓	1218	S	1	X		
3	QA-1	↓	—	S	1	X		
4	S103-43	↓	1302	S	1	X		
5	S103-4-8	↓	1337	S	1	X		
~~6~~	S103-42-44	↓	1455	S	1		X	
6	S103-42-46	↓	1438	S	1			X
7	S104-42	↓	1530	S	1	X		
8	S104-6-8	↓	1535	S	1	X		
9	S113-48	6/26/96	1015	S	2	X		
10	~~S113-6~~	6/26/96	1000	S	2	X		

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

intact/cold

jar says SP-103 @ 1448
1448 is correct
S-103 is correct per
~~ok to add these~~ per Marty Lay
6/27/96 TW

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Martin E Lay / Martin E. Lay	6/26/96 1634	[signature]	6/26/96 1634

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

[illegible] SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9600580

Attention: MARTY LAY
Results & Invoice to: SHN
Address: 812 W. WABASH
EUREKA, CA 95501
Phone: 441-8855
Copies of Report to:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☒ Verbal ☐ By:__/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 930121.100
Project Name: NO CO EX
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	TPHd/MO	Cd, Cr, Ni, Pb, Zn	TPHG/BTEX
11	S-101-36	6/25/96	1620	S	13	1	X		
12	S-101-6-8	6/25/96	1626	S		1	X		
13	S-112-06	6/26/96	0915	S		2	X		
14	S-112-48		0930	S		2	X		
15	S-105-36		1045	S	11	2	X	X	
16	S-105-6-8		1053	S		2	X	X	
17	S-106-6		1045	S		2	X	X	
18	S-106-48		1100	S		2	X	X	
19	S-107-6		1115	S		3	X	X	X
20	QC-2			S	13	1	X		

SAMPLE CONDITION/SPECIAL INSTRUCTIONS: intact/rock

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Martin E. Lay MARTIN E. LAY	6-26-96/1634	[signature] 6/26/96	1634

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX L

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9600580

Attention: MARTY LAY
Results & Invoice to: SHN
Address: 812 W. WABASH
EUREKA, CA. 95501
Phone: 441-8855
Copies of Report to:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☒ Verbal ☐ By:__/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: NO G FIX
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPH D/MO	ANALYSIS: 8270
21	SD-2	6/26/96	1210	S	1		X	
22	SP-1	6/26/96	1225	S	1		X	
23	S-111-6"		1145	S	1		X	
24	S-111-48		1150	S	1		X	
25	S-108-6		1210	S	1		X	
26	S-108-48		1215	S	1		X	
27	S-109-6		1230	S	1		X	
28	S-109-48		1240	S	2		X	X
29	S-110-6		1315	S	1		X	
30	S-110-48		1320	S	1		X	

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
INTACT/COOL

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
MARTIN E. LAY	6/26/96/1634		6/26/96 1634

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX L

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: 9606580

Attention: Marky Lay
Results & Invoice to: SHN
Address: 812 W. Wabash Ave.
Eureka, Ca. 95501
Phone: 441-8855
Copies of Report to:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☒ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

PROJECT INFORMATION
Project Number: 930121.100
Project Name: No Co Ex
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPH/BTEX	Dissolved metals	Cd, Cr, Ni, Pb, Zn	TPH/TPHmo
	WP-3	6/25/96	1345	GW	4	b		X	X	
31	WP-3		1530		1		X			X
	WP-3		1630		3			X		
	WP-2		1625		1					X
32	WP-2		1640		1					X
	WP-2		1700		3		X			
	WP-1	6/26/96	1330		1			X		
33	WP-1		1600		1					X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

APPENDIX L

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
- only ~800 ML
- only 400 ML sample
2 TB

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1634 6/26/96	[signature] 6/26/96	1634

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus (Hand)

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX L

Quanterra
Environmental Services

TABLE OF CONTENTS

QUANTERRA PROJECT NUMBER 088382

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Environmental Services

CASE NARRATIVE

QUANTERRA PROJECT NUMBER 088382

General

Samples were re-injected for aroclors on July 23, 1996.

There were no anomalies associated with this report.

APPENDIX L

Quanterra Environmental Services

QUANTERRA'S QUALITY ASSURANCE PROGRAM

Quanterra has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documentable quality. A key element of this program is Quanterra's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

Single Control Samples. An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

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Quanterra
Environmental
Services

SAMPLE DESCRIPTION INFORMATION
for
North Coast Labs

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
088382-0001-SA	9606583-1A	SOIL	25 JUN 96		28 JUN 96
088382-0002-SA	9606583-2A	SOIL	26 JUN 96		28 JUN 96

Quanterra
Environmental
Services

Semivolatile Organics - Method 8270

APPENDIX L

Quanterra Environmental Services

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: North Coast Labs
Client ID: 9606583-2A
Lab ID: 088382-0002-SA
Matrix: SOIL Sampled: 26 JUN 96 Received: 28 JUN 96
Authorized: 28 JUN 96 Prepared: 01 JUL 96 Analyzed: 03 JUL 96

Parameter	Result	Wet wt. Units	Reporting Limit
Acenaphthene	ND	ug/kg	330
Acenaphthylene	ND	ug/kg	330
Anthracene	ND	ug/kg	330
Benzo(a)anthracene	ND	ug/kg	330
Benzo(a)pyrene	ND	ug/kg	330
Benzo(b)fluoranthene	ND	ug/kg	330
Benzo(g,h,i)perylene	ND	ug/kg	330
Benzo(k)fluoranthene	ND	ug/kg	330
Benzoic acid	ND	ug/kg	1600
Benzyl alcohol	ND	ug/kg	330
4-Bromophenyl phenyl ether	ND	ug/kg	330
Butyl benzyl phthalate	ND	ug/kg	330
4-Chloroaniline	ND	ug/kg	330
bis(2-Chloroethoxy)-methane	ND	ug/kg	330
bis(2-Chloroethyl)ether	ND	ug/kg	330
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	330
4-Chloro-3-methylphenol	ND	ug/kg	330
2-Chloronaphthalene	ND	ug/kg	330
2-Chlorophenol	ND	ug/kg	330
4-Chlorophenyl phenyl ether	ND	ug/kg	330
Chrysene	ND	ug/kg	330
Di-n-butyl phthalate	ND	ug/kg	330
Dibenz(a,h)anthracene	ND	ug/kg	330
Dibenzofuran	ND	ug/kg	330
1,2-Dichlorobenzene	ND	ug/kg	330
1,3-Dichlorobenzene	ND	ug/kg	330
1,4-Dichlorobenzene	ND	ug/kg	330
3,3'-Dichlorobenzidine	ND	ug/kg	660
2,4-Dichlorophenol	ND	ug/kg	330
Diethyl phthalate	ND	ug/kg	330
2,4-Dimethylphenol	ND	ug/kg	330
Dimethyl phthalate	ND	ug/kg	330
4,6-Dinitro-2-methylphenol	ND	ug/kg	1600
2,4-Dinitrophenol	ND	ug/kg	1600
2,4-Dinitrotoluene	ND	ug/kg	330
2,6-Dinitrotoluene	ND	ug/kg	330

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: David Nishimura Approved By: Steve Rogers

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APPENDIX L

Quanterra
Environmental Services

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: North Coast Labs
Client ID: 9606583-2A
Lab ID: 088382-0002-SA
Matrix: SOIL Sampled: 26 JUN 96 Received: 28 JUN 96
Authorized: 28 JUN 96 Prepared: 01 JUL 96 Analyzed: 03 JUL 96

Parameter	Result	Wet wt. Units	Reporting Limit
Di-n-octyl phthalate	ND	ug/kg	330
bis(2-Ethylhexyl)-phthalate	ND	ug/kg	330
Fluoranthene	ND	ug/kg	330
Fluorene	ND	ug/kg	330
Hexachlorobenzene	ND	ug/kg	330
Hexachlorobutadiene	ND	ug/kg	330
Hexachlorocyclopentadiene	ND	ug/kg	330
Hexachloroethane	ND	ug/kg	330
Indeno(1,2,3-cd)pyrene	ND	ug/kg	330
Isophorone	ND	ug/kg	330
2-Methylnaphthalene	ND	ug/kg	330
2-Methylphenol	ND	ug/kg	330
4-Methylphenol	ND	ug/kg	330
Naphthalene	ND	ug/kg	330
2-Nitroaniline	ND	ug/kg	1600
3-Nitroaniline	ND	ug/kg	1600
4-Nitroaniline	ND	ug/kg	1600
Nitrobenzene	ND	ug/kg	330
2-Nitrophenol	ND	ug/kg	330
4-Nitrophenol	ND	ug/kg	1600
N-Nitrosodiphenylamine	ND	ug/kg	330
N-Nitroso-di-n-propylamine	ND	ug/kg	330
Pentachlorophenol	ND	ug/kg	1600
Phenanthrene	ND	ug/kg	330
Phenol	ND	ug/kg	330
Pyrene	ND	ug/kg	330
1,2,4-Trichlorobenzene	ND	ug/kg	330
2,4,5-Trichlorophenol	ND	ug/kg	330
2,4,6-Trichlorophenol	ND	ug/kg	330
Aroclor 1016	ND	ug/kg	1600
Aroclor 1221	ND	ug/kg	1600
Aroclor 1232	ND	ug/kg	1600
Aroclor 1242	ND	ug/kg	1600
Aroclor 1248	ND	ug/kg	1600
Aroclor 1254	ND	ug/kg	1600
Aroclor 1260	ND	ug/kg	1600

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: David Nishimura Approved By: Steve Rogers

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Quanterra
Environmental Services

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: North Coast Labs
Client ID: 9606583-2A
Lab ID: 088382-0002-SA
Matrix: SOIL
Authorized: 28 JUN 96

Sampled: 26 JUN 96
Prepared: 01 JUL 96

Received: 28 JUN 96
Analyzed: 03 JUL 96

Surrogate	Recovery	
Nitrobenzene-d5	62	%
2-Fluorobiphenyl	82	%
Terphenyl-d14	81	%
Phenol-d5	73	%
2-Fluorophenol	76	%
2,4,6-Tribromophenol	90	%

ND = Not detected
NA = Not applicable

Reported By: David Nishimura

Approved By: Steve Rogers

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APPENDIX L

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
088382-0002-SA	SOIL	8270-S	01 JUL 96-11A	01 JUL 96-11A

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS
Project: 088382

Category: 8270-S Acid, Base and Neutrals by GC/MS.
Test: 8270CPL-TCL-S
Matrix: SOIL
QC Lot: 01 JUL 96-11A QC Run: 01 JUL 96-11A
Concentration Units: ug/kg

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Phenol	2500	2290	92	40-119
2-Chlorophenol	2500	2380	95	39-119
1,4-Dichlorobenzene	1660	1540	93	36-111
N-Nitroso-di-n-propylamine	1660	1500	90	35-117
1,2,4-Trichlorobenzene	1660	1580	95	36-107
4-Chloro-3-methylphenol	2500	2420	97	41-122
Acenaphthene	1660	1660	100	36-111
2,4-Dinitrotoluene	1660	1560	94	43-114
4-Nitrophenol	2500	2240	90	45-130
Pentachlorophenol	2500	2140	86	39-119
Pyrene	1660	1440	87	35-142

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra Environmental Services

SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration Spiked	Measured	Accuracy(%) SCS	Limits
Category: 8270-S				
Matrix: SOIL				
QC Lot: 01 JUL 96-11A QC Run: 01 JUL 96-11A				
Concentration Units: ug				
Nitrobenzene-d5	50.0	47.3	95	35-114
2-Fluorobiphenyl	50.0	48.2	96	39-115
Terphenyl-d14	50.0	42.5	85	40-127
2-Fluorophenol	75.0	89.6	119	35-121
Phenol-d5	75.0	73.2	98	35-113
2,4,6-Tribromophenol	75.0	65.0	87	24-112

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Test: 8270CPL-TCL-S
Matrix: SOIL
QC Lot: 01 JUL 96-11A QC Run: 01 JUL 96-11A

Analyte	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	330
Acenaphthylene	ND	ug/kg	330
Anthracene	ND	ug/kg	330
Benzo(a)anthracene	ND	ug/kg	330
Benzo(a)pyrene	ND	ug/kg	330
Benzo(b)fluoranthene	ND	ug/kg	330
Benzo(g,h,i)perylene	ND	ug/kg	330
Benzo(k)fluoranthene	ND	ug/kg	330
Benzoic acid	ND	ug/kg	1600
Benzyl alcohol	ND	ug/kg	330
4-Bromophenyl phenyl ether	ND	ug/kg	330
Butyl benzyl phthalate	ND	ug/kg	330
4-Chloroaniline	ND	ug/kg	330
bis(2-Chloroethoxy)-methane	ND	ug/kg	330
bis(2-Chloroethyl)ether	ND	ug/kg	330
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	330
4-Chloro-3-methylphenol	ND	ug/kg	330
2-Chloronaphthalene	ND	ug/kg	330
2-Chlorophenol	ND	ug/kg	330
4-Chlorophenyl phenyl ether	ND	ug/kg	330
Chrysene	ND	ug/kg	330
Di-n-butyl phthalate	ND	ug/kg	330
Dibenz(a,h)anthracene	ND	ug/kg	330
Dibenzofuran	ND	ug/kg	330
1,2-Dichlorobenzene	ND	ug/kg	330
1,3-Dichlorobenzene	ND	ug/kg	330
1,4-Dichlorobenzene	ND	ug/kg	330
3,3'-Dichlorobenzidine	ND	ug/kg	660
2,4-Dichlorophenol	ND	ug/kg	330
Diethyl phthalate	ND	ug/kg	330
2,4-Dimethylphenol	ND	ug/kg	330
Dimethyl phthalate	ND	ug/kg	330
4,6-Dinitro-2-methylphenol	ND	ug/kg	1600
2,4-Dinitrophenol	ND	ug/kg	1600
2,4-Dinitrotoluene	ND	ug/kg	330
2,6-Dinitrotoluene	ND	ug/kg	330
Di-n-octyl phthalate	ND	ug/kg	330

Quanterra Environmental Services

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Test: 8270CPL-TCL-S
Matrix: SOIL
QC Lot: 01 JUL 96-11A QC Run: 01 JUL 96-11A

Analyte	Result	Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	ug/kg	330
Fluoranthene	ND	ug/kg	330
Fluorene	ND	ug/kg	330
Hexachlorobenzene	ND	ug/kg	330
Hexachlorobutadiene	ND	ug/kg	330
Hexachlorocyclopentadiene	ND	ug/kg	330
Hexachloroethane	ND	ug/kg	330
Indeno(1,2,3-cd)pyrene	ND	ug/kg	330
Isophorone	ND	ug/kg	330
2-Methylnaphthalene	ND	ug/kg	330
2-Methylphenol	ND	ug/kg	330
4-Methylphenol	ND	ug/kg	330
Naphthalene	ND	ug/kg	330
2-Nitroaniline	ND	ug/kg	1600
3-Nitroaniline	ND	ug/kg	1600
4-Nitroaniline	ND	ug/kg	1600
Nitrobenzene	ND	ug/kg	330
2-Nitrophenol	ND	ug/kg	330
4-Nitrophenol	ND	ug/kg	1600
N-Nitrosodiphenylamine	ND	ug/kg	330
N-Nitroso-di-n-propylamine	ND	ug/kg	330
Pentachlorophenol	ND	ug/kg	1600
Phenanthrene	ND	ug/kg	330
Phenol	ND	ug/kg	330
Pyrene	ND	ug/kg	330
1,2,4-Trichlorobenzene	ND	ug/kg	330
2,4,5-Trichlorophenol	ND	ug/kg	330
2,4,6-Trichlorophenol	ND	ug/kg	330
Aroclor 1016	ND	ug/kg	1600
Aroclor 1221	ND	ug/kg	1600
Aroclor 1232	ND	ug/kg	1600
Aroclor 1242	ND	ug/kg	1600
Aroclor 1248	ND	ug/kg	1600
Aroclor 1254	ND	ug/kg	1600
Aroclor 1260	ND	ug/kg	1600

APPENDIX L

Quanterra
Environmental
Services

Semivolatile Organics - Method 8270 Medium

APPENDIX L

Quanterra Environmental Services

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: North Coast Labs
Client ID: 9606583-1A
Lab ID: 088382-0001-SA
Matrix: SOIL Sampled: 25 JUN 96 Received: 28 JUN 96
Authorized: 28 JUN 96 Prepared: NA Analyzed: 03 JUL 96

Parameter	Result	Wet wt. Units	Reporting Limit	
Acenaphthene	ND	UG/KG	5000	j
Acenaphthylene	ND	UG/KG	5000	
Anthracene	ND	UG/KG	5000	
Benzo(a)anthracene	ND	UG/KG	5000	
Benzo(a)pyrene	ND	UG/KG	5000	
Benzo(b)fluoranthene	ND	UG/KG	5000	
Benzo(g,h,i)perylene	ND	UG/KG	5000	
Benzo(k)fluoranthene	ND	UG/KG	5000	
Benzoic acid	ND	UG/KG	25000	
Benzyl alcohol	ND	UG/KG	5000	
4-Bromophenyl phenyl ether	ND	UG/KG	5000	
Butyl benzyl phthalate	ND	UG/KG	5000	
4-Chloroaniline	ND	UG/KG	5000	
bis(2-Chloroethoxy)-methane	ND	UG/KG	5000	
bis(2-Chloroethyl)ether	ND	UG/KG	5000	
2,2'-Oxybis(1-chloropropane)	ND	UG/KG	5000	
4-Chloro-3-methylphenol	ND	UG/KG	5000	
2-Chloronaphthalene	ND	UG/KG	5000	
2-Chlorophenol	ND	UG/KG	5000	
4-Chlorophenyl phenyl ether	ND	UG/KG	5000	
Chrysene	ND	UG/KG	5000	
Di-n-butyl phthalate	ND	UG/KG	5000	
Dibenz(a,h)anthracene	ND	UG/KG	5000	
Dibenzofuran	ND	UG/KG	5000	
1,2-Dichlorobenzene	ND	UG/KG	5000	
1,3-Dichlorobenzene	ND	UG/KG	5000	
1,4-Dichlorobenzene	ND	UG/KG	5000	
3,3'-Dichlorobenzidine	ND	UG/KG	10000	
2,4-Dichlorophenol	ND	UG/KG	5000	
Diethyl phthalate	ND	UG/KG	5000	
2,4-Dimethylphenol	ND	UG/KG	5000	
Dimethyl phthalate	ND	UG/KG	5000	
4,6-Dinitro-2-methylphenol	ND	UG/KG	25000	
2,4-Dinitrophenol	ND	UG/KG	25000	
2,4-Dinitrotoluene	ND	UG/KG	5000	
2,6-Dinitrotoluene	ND	UG/KG	5000	

(continued on following page)

ND = Not detected
NA = Not applicable

Reported By: David Nishimura Approved By: Steve Rogers

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Quanterra
Environmental Services

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: North Coast Labs
Client ID: 9606583-1A
Lab ID: 088382-0001-SA
Matrix: SOIL Sampled: 25 JUN 96 Received: 28 JUN 96
Authorized: 28 JUN 96 Prepared: NA Analyzed: 03 JUL 96

Parameter	Result	Wet wt. Units	Reporting Limit
Di-n-octyl phthalate	ND	UG/KG	5000
bis(2-Ethylhexyl)-phthalate	ND	UG/KG	5000
Fluoranthene	ND	UG/KG	5000
Fluorene	ND	UG/KG	5000
Hexachlorobenzene	ND	UG/KG	5000
Hexachlorobutadiene	ND	UG/KG	5000
Hexachlorocyclopentadiene	ND	UG/KG	5000
Hexachloroethane	ND	UG/KG	5000
Indeno(1,2,3-cd)pyrene	ND	UG/KG	5000
Isophorone	ND	UG/KG	5000
2-Methylnaphthalene	ND	UG/KG	5000
2-Methylphenol	ND	UG/KG	5000
4-Methylphenol	ND	UG/KG	5000
Naphthalene	ND	UG/KG	5000
2-Nitroaniline	ND	UG/KG	25000
3-Nitroaniline	ND	UG/KG	25000
4-Nitroaniline	ND	UG/KG	25000
Nitrobenzene	ND	UG/KG	5000
2-Nitrophenol	ND	UG/KG	5000
4-Nitrophenol	ND	UG/KG	25000
N-Nitrosodiphenylamine	ND	UG/KG	5000
N-Nitroso-di-n-propylamine	ND	UG/KG	5000
Pentachlorophenol	ND	UG/KG	25000
Phenanthrene	ND	UG/KG	5000
Phenol	ND	UG/KG	5000
Pyrene	ND	UG/KG	5000
1,2,4-Trichlorobenzene	ND	UG/KG	5000
2,4,5-Trichlorophenol	ND	UG/KG	5000
2,4,6-Trichlorophenol	ND	UG/KG	5000
Aroclor 1016	ND	UG/KG	25000
Aroclor 1221	ND	UG/KG	25000
Aroclor 1232	ND	UG/KG	25000
Aroclor 1242	ND	UG/KG	25000
Aroclor 1248	ND	UG/KG	25000
Aroclor 1254	ND	UG/KG	25000
Aroclor 1260	ND	UG/KG	25000

(continued on following page)

ND = Not detected
NA = Not applicable

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The cover letter is an integral part of this report.
Rev 230787

APPENDIX L

Quanterra
Environmental Services

Semivolatile Organics
Target Compound List (TCL)
Method 8270

Client Name: North Coast Labs
Client ID: 9606583-1A
Lab ID: 088382-0001-SA
Matrix: SOIL
Authorized: 28 JUN 96

Sampled: 25 JUN 96
Prepared: NA

Received: 28 JUN 96
Analyzed: 03 JUL 96

Surrogate	Recovery	
Nitrobenzene-d5	73	%
2-Fluorobiphenyl	94	%
Terphenyl-d14	56	%
Phenol-d5	74	%
2-Fluorophenol	77	%
2,4,6-Tribromophenol	86	%

Note j : All Reporting Limits for this sample raised due to matrix interferences.

ND = Not detected
NA = Not applicable

Reported By: David Nishimura

Approved By: Steve Rogers

The cover letter is an integral part of this report.
Rev 230787

APPENDIX L

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
088382-0001-SA	SOIL	8270-MED-S	02 JUL 96-11A	02 JUL 96-11A

APPENDIX L

Quanterra Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS
Project: 088382

Category: 8270-MED-S Semivolatile Organics - GC/MS
Test: 8270CPM-TCL-S
Matrix: SOIL
QC Lot: 02 JUL 96-11A QC Run: 02 JUL 96-11A
Concentration Units: ug/kg

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Phenol	37500	31600	84	22-110
2-Chlorophenol	37500	34600	92	40-116
1,4-Dichlorobenzene	25000	23000	92	39-99
N-Nitroso-di-n-propylamine	25000	20000	80	38-107
4-Chloro-3-methylphenol	37500	31000	83	45-108
1,2,4-Trichlorobenzene	25000	22600	90	42-108
Acenaphthene	25000	24300	97	41-102
2,4-Dinitrotoluene	25000	21300	85	46-103
4-Nitrophenol	37500	20800	55	11-114
Pentachlorophenol	37500	19400	52	31-109
Pyrene	25000	22700	91	31-130

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra Environmental Services

SINGLE CONTROL SAMPLE REPORT
Semivolatile Organics by GC/MS

Analyte	Concentration Spiked	Measured	Accuracy(%) SCS	Limits
Category: 8270-MED-S				
Matrix: SOIL				
QC Lot: 02 JUL 96-11A QC Run: 02 JUL 96-11A				
Concentration Units: ug/kg				
Nitrobenzene-d5	50.0	37.5	75	23-120
2-Fluorobiphenyl	50.0	42.7	85	30-115
Terphenyl-d14	50.0	39.3	79	18-137
2-Fluorophenol	75.0	63.0	84	25-121
Phenol-d5	75.0	58.2	78	24-113
2,4,6-Tribromophenol	75.0	54.4	73	19-122

Calculations are performed before rounding to avoid round-off errors in calculated results

Quanterra
Environmental Services

METHOD BLANK REPORT
Semivolatile Organics by GC/MS

Test: 8270CPM-TCL-S
Matrix: SOIL
QC Lot: 02 JUL 96-11A QC Run: 02 JUL 96-11A

Analyte	Result	Units	Reporting Limit
Acenaphthene	ND	ug/kg	5000
Acenaphthylene	ND	ug/kg	5000
Anthracene	ND	ug/kg	5000
Benzo(a)anthracene	ND	ug/kg	5000
Benzo(a)pyrene	ND	ug/kg	5000
Benzo(b)fluoranthene	ND	ug/kg	5000
Benzo(g,h,i)perylene	ND	ug/kg	5000
Benzo(k)fluoranthene	ND	ug/kg	5000
Benzoic acid	ND	ug/kg	25000
Benzyl alcohol	ND	ug/kg	5000
4-Bromophenyl phenyl ether	ND	ug/kg	5000
Butyl benzyl phthalate	ND	ug/kg	5000
4-Chloroaniline	ND	ug/kg	5000
bis(2-Chloroethoxy)-methane	ND	ug/kg	5000
bis(2-Chloroethyl)ether	ND	ug/kg	5000
2,2'-Oxybis(1-chloropropane)	ND	ug/kg	5000
4-Chloro-3-methylphenol	ND	ug/kg	5000
2-Chloronaphthalene	ND	ug/kg	5000
2-Chlorophenol	ND	ug/kg	5000
4-Chlorophenyl phenyl ether	ND	ug/kg	5000
Chrysene	ND	ug/kg	5000
Di-n-butyl phthalate	ND	ug/kg	5000
Dibenz(a,h)anthracene	ND	ug/kg	5000
Dibenzofuran	ND	ug/kg	5000
1,2-Dichlorobenzene	ND	ug/kg	5000
1,3-Dichlorobenzene	ND	ug/kg	5000
1,4-Dichlorobenzene	ND	ug/kg	5000
3,3'-Dichlorobenzidine	ND	ug/kg	10000
2,4-Dichlorophenol	ND	ug/kg	5000
Diethyl phthalate	ND	ug/kg	5000
2,4-Dimethylphenol	ND	ug/kg	5000
Dimethyl phthalate	ND	ug/kg	5000
4,6-Dinitro-2-methylphenol	ND	ug/kg	25000
2,4-Dinitrophenol	ND	ug/kg	25000
2,4-Dinitrotoluene	ND	ug/kg	5000
2,6-Dinitrotoluene	ND	ug/kg	5000
Di-n-octyl phthalate	ND	ug/kg	5000

Quanterra
Environmental Services

METHOD BLANK REPORT
Semivolatile Organics by GC/MS (cont.)

Test: 8270CPM-TCL-S
Matrix: SOIL
QC Lot: 02 JUL 96-11A QC Run: 02 JUL 96-11A

Analyte	Result	Units	Reporting Limit
bis(2-Ethylhexyl)-phthalate	ND	ug/kg	5000
Fluoranthene	ND	ug/kg	5000
Fluorene	ND	ug/kg	5000
Hexachlorobenzene	ND	ug/kg	5000
Hexachlorobutadiene	ND	ug/kg	5000
Hexachlorocyclopentadiene	ND	ug/kg	5000
Hexachloroethane	ND	ug/kg	5000
Indeno(1,2,3-cd)pyrene	ND	ug/kg	5000
Isophorone	ND	ug/kg	5000
2-Methylnaphthalene	ND	ug/kg	5000
2-Methylphenol	ND	ug/kg	5000
4-Methylphenol	ND	ug/kg	5000
Naphthalene	ND	ug/kg	5000
2-Nitroaniline	ND	ug/kg	25000
3-Nitroaniline	ND	ug/kg	25000
4-Nitroaniline	ND	ug/kg	25000
Nitrobenzene	ND	ug/kg	5000
2-Nitrophenol	ND	ug/kg	5000
4-Nitrophenol	ND	ug/kg	25000
N-Nitrosodiphenylamine	ND	ug/kg	5000
N-Nitroso-di-n-propylamine	ND	ug/kg	5000
Pentachlorophenol	ND	ug/kg	25000
Phenanthrene	ND	ug/kg	5000
Phenol	ND	ug/kg	5000
Pyrene	ND	ug/kg	5000
1,2,4-Trichlorobenzene	ND	ug/kg	5000
2,4,5-Trichlorophenol	ND	ug/kg	5000
2,4,6-Trichlorophenol	ND	ug/kg	5000
Aroclor 1016	ND	ug/kg	25000
Aroclor 1221	ND	ug/kg	25000
Aroclor 1232	ND	ug/kg	25000
Aroclor 1242	ND	ug/kg	25000
Aroclor 1248	ND	ug/kg	25000
Aroclor 1254	ND	ug/kg	25000
Aroclor 1260	ND	ug/kg	25000

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Page 1 of 1

SUB-CONTRACT
CHAIN OF CUSTODY RECORD

Sampler (Signature): ______________________

Date Shipped: 6/27/96 Carrier: Airborne

Air Bill No: __________ Cooler #: __________

SHIP TO:

Client Name: __________

Company: Quanterra

Address: 880 Riverside Parkway
West Sacramento, CA. 95605

Attn: Sample Control (916) 374-4365

SEND RESULTS TO:

NORTH COAST LABS
5680 West End Road
Arcata, CA 95521
(707) 822-4649

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[signature] 6/27/96 1100	[signature]	6-28-96 9:50
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	** Received by Laboratory by:	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time

ANALYSIS REQUEST

NCL Sample ID Number	Sample Description	Date/Time Sampled	Analysis Requested	Sample Condition
1606583-1A	S-103-42-44	6/25/96	8270 soil	1 brass tube
↓ -2A	S-109-48	6/26/96	↓	↓

Special Instructions: received in good condition. [initials] 6-28-96

Preservation Record Date: __________ Initials: __________ Preservation: N/A

EXPECTED ANALYTICAL T.A.T.'s:
Immediate
Attn: (100% Surcharge): __________ RUSH (50% Surcharge): __________ Standard: X

Return Chain of Custody to NCL

APPENDIX L

NORTH COAST LABORATORIES LTD.

Date: 08/08/96 REPORT

REPORT Selvage, Heber and Nelson
TO 812 West Wabash Avenue
Eureka, CA 95501

WORK ORDER 96-07-514

INVOICE # 60053181

Attn: Marty Lay

WORK ID: 930121.00/Spec. Mill/NoCoEx

REPORT CERTIFIED BY

Lisa M Savage
Laboratory Supervisor(s)

Michelle Dostal
QA Officer

Page Noon-Nye
Jesse G. Chaney, Jr.
Laboratory Director

SAMPLE IDENTIFICATION

Fraction	Sample Description
01	S-107-6
02	Blank
03	Lab. Control Sample

Comments:

Notes and Definitions:

Limit = Reporting Limit
ND = None Detected

REC'D AUG 13 1996

APPENDIX L

SAMPLE ID: S-107-6 FRAC.: 01A COLLECTED: 06/26/96 RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Cam Extraction	07/30/96						
Lead	ND	0.45	mg/L	90		08/08/96	EPA 239.2

SAMPLE ID: Blank FRAC.: 02A COLLECTED: N/A RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Cam Extraction	07/30/96						
Lead	ND	0.45	mg/L	90		08/08/96	EPA 239.2

SAMPLE ID: Lab. Control Sample FRAC.: 03A COLLECTED: N/A RECEIVED: 06/26/96

PARAMETER	RESULT	LIMIT	UNITS	DIL.FACTOR	EXTRACTED	RUN	METHOD
Cam Extraction	07/30/96						
Lead	114	N/A	% Rec	4.0		08/08/96	EPA 239.2

APPENDIX L

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

P. 2 of 4

LABORATORY NUMBER: 9607514

Attention: Marty Lay
Results & Invoice to: SHN
Address: 812 W. Wabash, Eureka, CA 95501
Phone: 441-8855
Copies of Report to:

PROJECT INFORMATION
Project Number: 930121.100
Project Name: No Co Ex
Purchase Order Number:

					PRESERVATIVE			
					CONTAINER	13	11	13
LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	TPHD/MO	Cd, Cr, Ni, Pb, Zn	TPHG/BTEX
11	SH01-36	6/25/96	1620	S	1	X		
12	S-101-6-8	6/25/96	1626	S	1	X		
13	S-112-0-6	6/26/96	0915	S	2	X		
14	S-112-48		0930	S	2	X		
15	S-105-36		1045	S	2	X	X	
16	S-105-6-8		1053	S	2	X	X	
17	S-106-6		1045	S	2	X	X	
18	S-106-48		1100	S	2	X	X	
19	S-107-6		1115	S	3	X	X	X
20	QC-2			S	1	X		

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Martin E. Lay	6-26-96	[signature]	6/26/96 1634

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5-7 Day ☒ STD (2-3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☒ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
intact cool

SAMPLE DISPOSAL
☒ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX E

PERMITS

RECD JUL 02 1996

APPENDIX L

HUMBOLDT COUNTY DIVISION OF ENVIRONMENTAL HEALTH – HAZARDOUS MATERIALS UNIT

WELL PERMIT APPLICATION

file 697L 1

Facility ID # LOP 12518 Permit # 518-C

Facility Name: SPECIALTY MILL

Site Address: 2000 FOSTER AVE.

Site Owner: NORTHCOAST EXPORT Telephone: (707) 725-6911

Address: 1053 NORTHWESTERN AVE, FORTUNA, CA. 95540 APN#: 505-161-11

RP Name: EEL RIVER SAWMILLS, INC. Telephone: (707) 725-6911

Address: 1053 NORTHWESTERN, FORTUNA CA. 95540

Consultant: SHN ENGINEERS – MARTIN LAY Telephone: (707) 441-8855

Address: 812 W. WABASH EUREKA Reg.#/Type: 28031 Civil

Driller: N/A Telephone:

Address: C-57 Lic.#:

Onsite Well/Boring 3 WP 6 9 SGS # Offsite Well/Boring 0

Activity: ☒ Contruct ☐ Destroy ☐ Repair/Modify Electrode Type:

Well Type: ☐ Monitoring Well ☐ Injection Well ☐ Vapor Extraction ☒ Soil Gas Survey
☐ Extraction Well ☐ Piezometer ☐ Cathodic Protection ☒ Temporary Well Point*
☐ Vadose Well ☐ Vapor Point ☐ Geologic Boring
Other (specify): * DIRECT PUSH / 1.25 in. OD * Specify type

Investigation Type: ☒ Site Assessment ☐ Disposal Practice ☒ UST
☐ Surface Contamination ☐ Surface Impoundment ☐ AST
Other (specify):

Investigation Phase: ☐ Initial ☒ Subsequent ☐ Remediation

Suspected Contaminants: TOTAL PETROLEUM HYDROCARBONS AS GAS, DIESEL, MOTOR OIL
NO VOLATILE ORGANICS found previously

Coastal Zone Permit Required (Y/N) N

Construction Detail Attached Y

Total Depth:
Seal Depth:
Screen Interval:
Bore Diameter:
Casing Diameter:
Drilling Method: N/A

A sealed well construction detail illustrating depth of blank, screen, sanitary and surface seals, and pack size, type and thicknesses; site plan illustrating boring/well locations and buried utilities; a copy of the NCRWQCB approval letter for the workplan (if non-LOP) shall be submitted with this application. Well identification number and type shall be affixed to the exterior surface of the security structure. In addition, all wells must include an identification attached to the interior surface as follows:1) Well ID No. 2) Well Type 3) Well Depth 4) Casing Diameter 5) Screened Interval. Submit legal Right-of-Entry, off site well address, encroachment permit, etc. with permit application.

Disposal/Containment for Soil Cuttings: D.O.T. 17 E/H STEEL DRUMS

Disposal/Containment for Rinsate: D.O.T. 17 E/H STEEL DRUMS

Disposal/Containment for Development Water:

Copies: File-*white* RP/owner-*yellow* Consultant-*pink* Driller-*gold*

HUMBOLDT COUNTY DIVISION OF ENVIRONMENTAL HEALTH – HAZARDOUS MATERIALS UNIT

WELL PERMIT APPLICATION

Facility ID # LOP 12518 Permit # 518-C

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

Worker's Compensation Certificate:

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

Signature of Well Driller - no proxies N/A Date:

Insurance Carrier:

Policy #: Expiration Date:

FOR OFFICE USE ONLY

Permit Approval: C.G. Hawkins Date: 6/26/96

Fee: 214.00 Date: 6/26/96 Receipt: 175615

Initial Inspection: Date:

Final Inspection: Date:

No Drilling
Direct Push Probes & Well Points

rev. 3/95

APPENDIX M

SHN
CONSULTING ENGINEERS
& GEOLOGISTS

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Selvage, PE
K. Jeff Nelson, PE
Roland S. Johnson, Jr., C.E.G.

Reference: 930121.100

September 4, 1996

Mr. Dale Dell'Osso
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: ADDENDUM NO. 1 TO THE JULY 1996 REMEDIAL ACTION PLAN FOR NORTH COAST EXPORTS SPECIALTY MILL SITE (former), 2000 FOSTER AVENUE, ARCATA, CA, LOP # 12518

Dear Mr. Dell'Osso:

SHN Consulting Engineers and Geologists, Inc. (SHN) on behalf of Eel River Sawmills, Inc. (ERS), is submitting the enclosed addendum for your approval. The addendum has been prepared subsequent to my discussion with you, Rick Azevedo (NCRWQCB), and ERS, relative to minimizing the number of working cells in the proposed bioremediation unit. This action will reduce the potential for contaminated soil/stormwater runoff contact, and maximize efficiency of the winterization operation. Information presented in this addendum is intended to allow flexibility in the layout, operations and regulatory compliance for the proposed soil bioremediation cells.

As an alternative to the windrow cells proposed in the RAP, ERS, and SHN propose placing the soil in longer, wider, higher windrow cells. Using the previous SHN estimate of 1,200 to 1,800 cubic yards of soil from the former Specialty Mill site to be processed, and depending on actual useable surface area, up to three large cells will be constructed (see Figure 1). Configuration and orientation of the larger cells will be similar to that of the previously proposed cell layout (see Figure 2). Soil mixing will occur on larger surface areas than originally proposed resulting in less traffic onto and off of the cells. This will reduce the potential for tracking soil off the cells into storm water drainage facilities. The deeper soils will necessitate a vigorous tilling operation to reach lower soil sections, but that operation will help with keeping soil texture loose, well aerated, and physically manageable.

Material for underlayment and covering of the soil cells will be a reinforced polyethylene plastic of 12 to 20 mil thickness. Thickness and specific strength parameters will depend upon the final cell dimensions and the method of covering.

SHN
CONSULTING ENGINEERS
& GEOLOGISTS

Covering of the soil cells for winterization will be done in late fall, prior to October 1, and the cells will remain covered until May 15 of the following year. Cell coverings will then be removed to allow continued tilling of the soil and monitoring of the bioremediation activity as discussed in the RAP.

Please review and expedite processing of this document to allow for proposed soil excavation this month (September). Call me at 441-8855, or Dennis Scott at 725-6911, if you have any questions regarding the proposed remedial action.

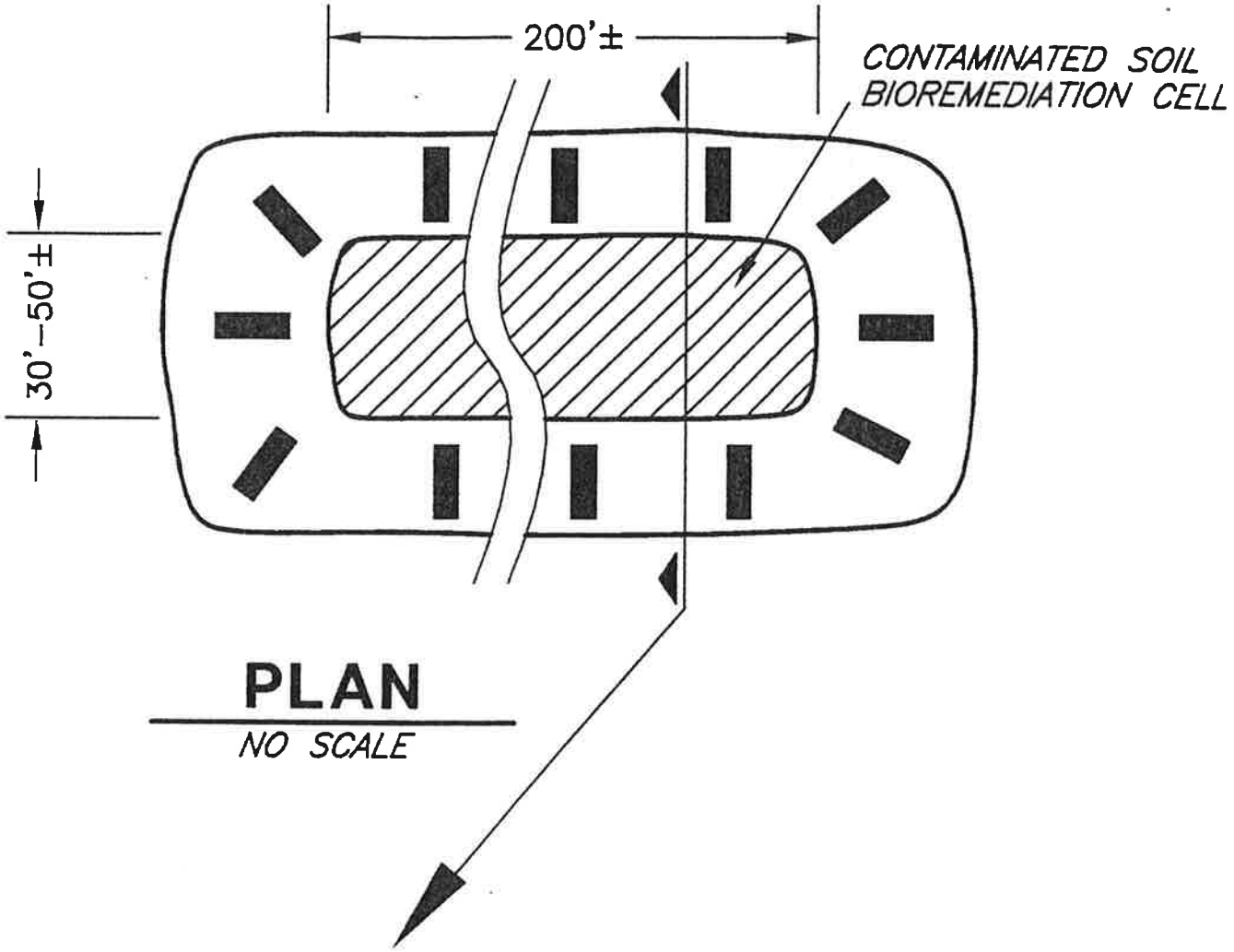
Sincerely

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

REGISTERED PROFESSIONAL ENGINEER
MARTIN E. LAY
No. 28031
5-31-96
CIVIL
STATE OF CALIFORNIA

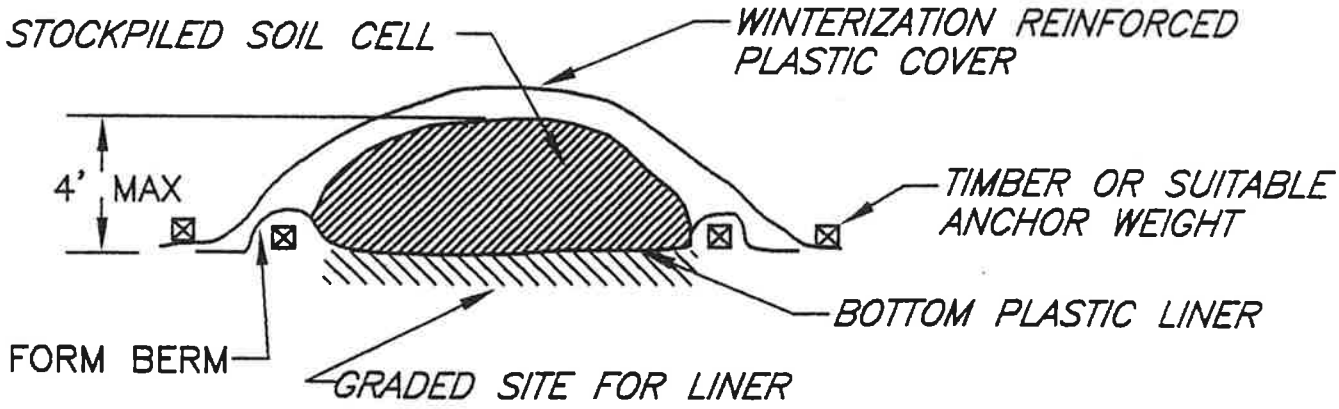
Martin E. Lay, P.E.
Project Manager

MEL:ls
Enclosure
cc w/enclosure: Dennis Scott, ERS
Rick Steed, ERS
Rick Azevedo, NCRWQCB



PLAN

NO SCALE



SECTION

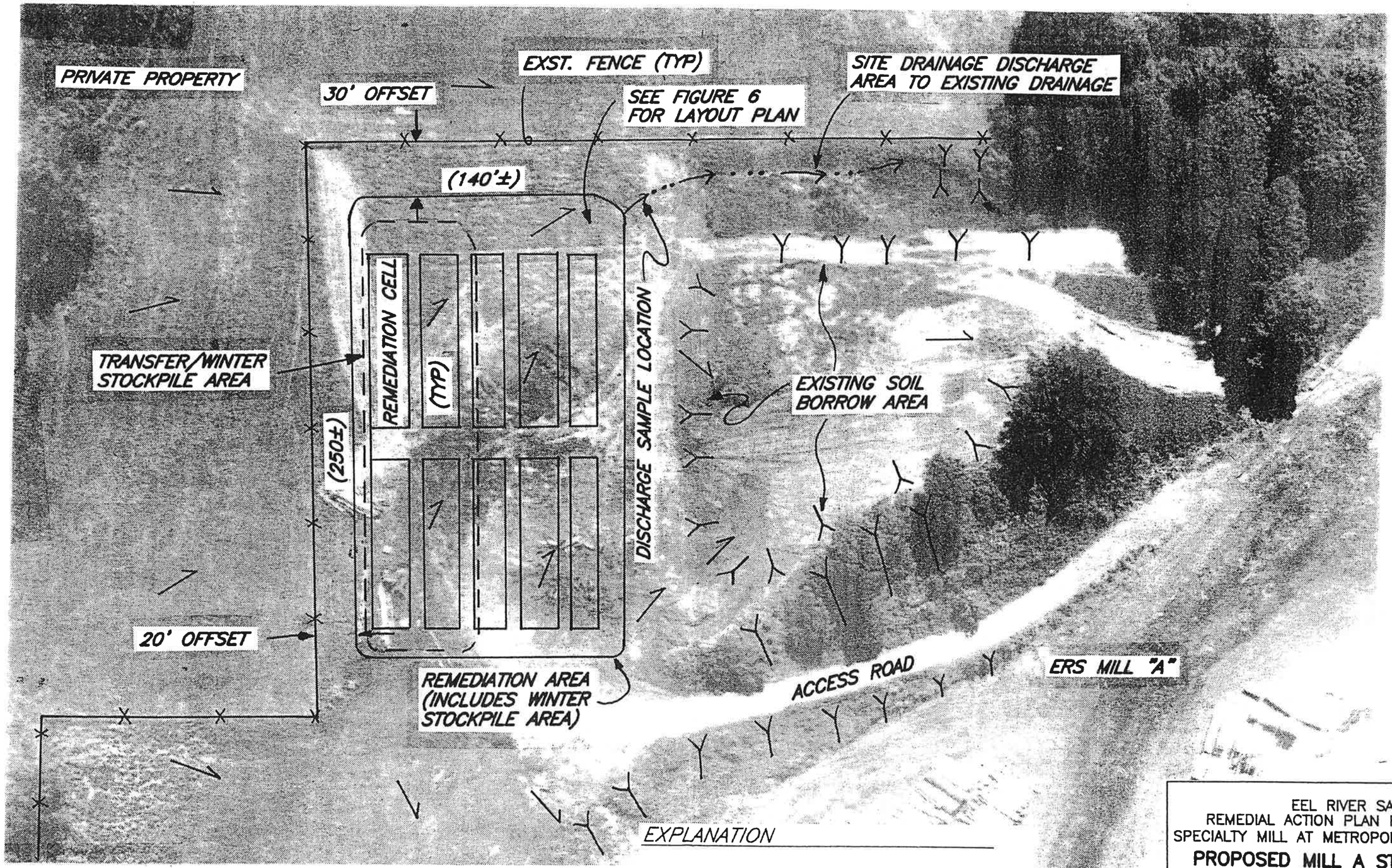
NO SCALE

EEL RIVER SAWMILLS, IN
REMEDIAL ACTION PLAN FOR FORME
SPECIALTY MILL AT METROPOLITAN MILL

REMEDIATION CELL/WINTERIZATIO

SHN 930121.10
SEPTEMBER 199

930121F1



EEL RIVER SAWMILLS, INC.
REMEDIAL ACTION PLAN FOR FORMER
SPECIALTY MILL AT METROPOLITAN MILL A

PROPOSED MILL A STOCKPILE/ REMEDIATION AREA

SHN 930121.100
SEPTEMBER 1996
FIGURE 2

APPENDIX M

NORTH COAST EXPORT SPECIALTY MILL (FORMER) REMEDIAL ACTION PLAN FOR SOIL CORRECTIVE ACTION

Prepared for:
EEL RIVER SAWMILLS, INC.

SHN
Consulting Engineers & Geologists, Inc.

812 W. Wabash
Eureka, CA 95501-2138
707\441-8855

JULY 1996

APPENDIX M

CONSULTING ENGINEERS
& GEOLOGISTS

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Seivage, PE
K. Jeff Nelson, PE
Roland S. Johnson, Jr., C.E.G.

Reference: 930121.100

August 1, 1996

Mr. Dale Dell'Osso
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: REMEDIAL ACTION PLAN FOR NORTH COAST EXPORTS SPECIALTY MILL SITE (former), 2000 FOSTER AVENUE, ARCATA, CA, LOP # 12518

Dear Mr. Dell'Osso,

SHN Consulting Engineers and Geologists Inc. (SHN), on behalf of Eel River Sawmills Inc. (ERS), is submitting the enclosed Remedial Action Plan (RAP) for the subject site for your approval. The RAP has been prepared in response to your letter to Mr. Dennis Scott (ERS), dated July 2, 1996.

Please review and expedite processing of this document to allow for proposed excavation this September. Call me at 441-8855, or Dennis Scott at 725-6911, if you have any questions regarding the proposed remedial action.

Sincerely

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

Martin E. Lay P.E.
Project Manager

MEL:ls
Enclosure
cc w/enclosure: Dennis Scott, ERS
Rick Steed, ERS
Rick Azevedo, NCRWQCB

APPENDIX M

Reference: 930121.100

NORTH COAST EXPORT SPECIALTY MILL (FORMER) REMEDIAL ACTION PLAN FOR SOIL CORRECTIVE ACTION

Prepared for:

EEL RIVER SAWMILLS, INC.

Prepared by:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash
Eureka, CA 95501-2138
707/441-8855

JULY 1996

QA/QC:JLA

1993\930121\TITLE

APPENDIX M

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

FIGURES Follows Page

TABLES

INTRODUCTION

This remedial action plan (RAP) is being submitted to the Humboldt County Division of Environmental Health (HCDEH) on behalf of Eel River Sawmills Inc. (ERS), by SHN Consulting Engineers and Geologists, Inc. (SHN). The plan will detail ERS's proposed stockpiling, low tech bioremediation, or alternative disposal of petroleum contaminated soils. The soils will be excavated from the Specialty Mill (former) (LOP # 12518) site in Arcata, California, and transferred to ERS Mill A, in Fortuna, for the proposed soil stockpiling and remedial action. This plan does not include any potentially contaminated soil being added to the proposed system from any Mill A operations or cleanup activities. ERS will submit an addendum work plan to HCDEH for review prior to any change in this proposed RAP.

The RAP includes clarification of detail requested by HCDEH in a letter dated July 2, 1996, sent to ERS (see Appendix A). Additionally, the RAP appends and clarifies data contained in the Report of Waste Discharge for Transfer of Soil from Eel River Sawmills, Inc. Former Specialty Mill in Arcata, to Metropolitan Mill A in Fortuna, Humboldt County, California, (SHN, May 1996), submitted to the California Regional Water Quality Control Board, North Coast Region (RWQCB), and HCDEH.

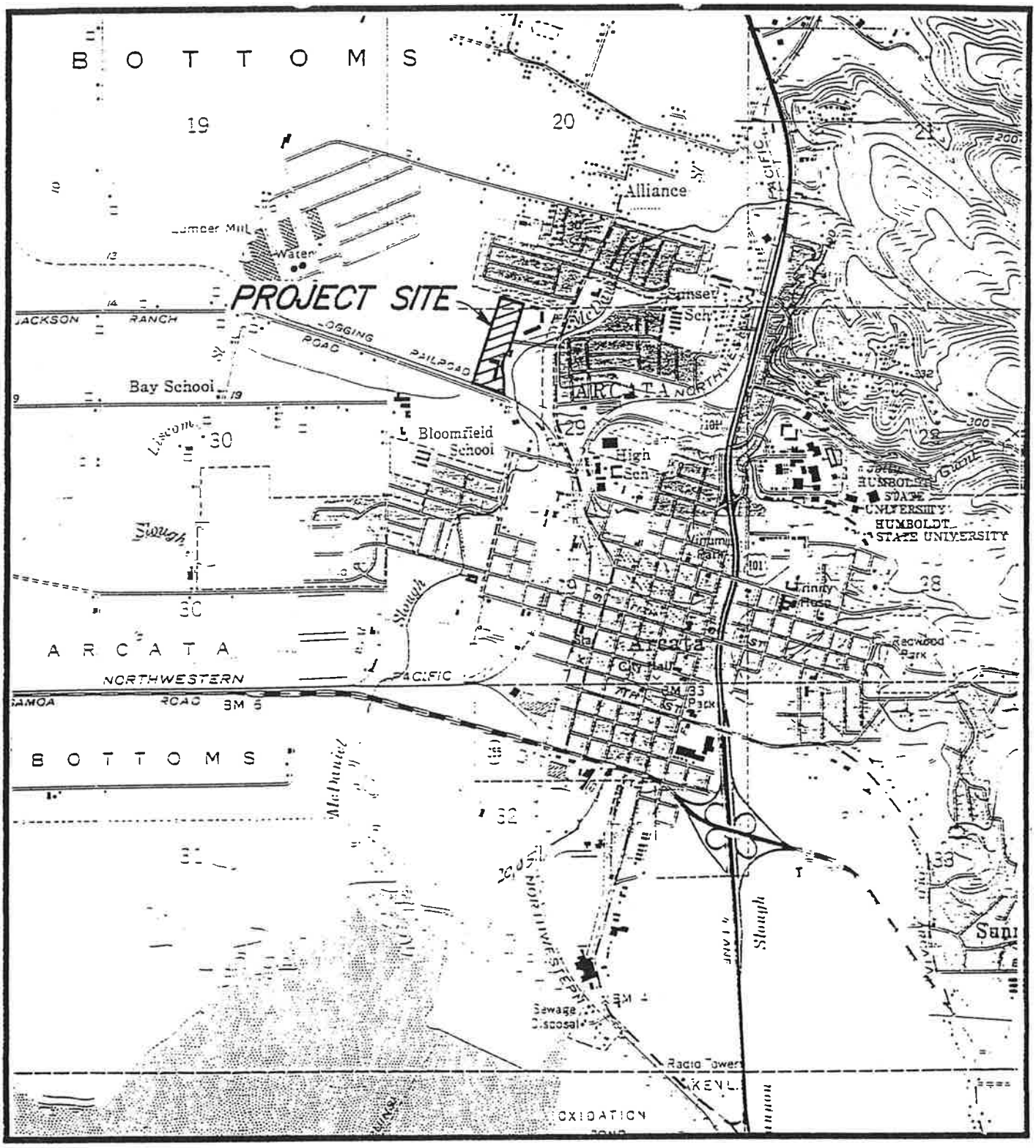
Work and reporting will be conducted in conformance with the provisions of the California Code of Regulations (CCR), Title 23, Division 3, Chapter 16, Article 11 Corrective Action Requirements.

Site Location

ERS proposes to transport excavated petroleum hydrocarbon contaminated soil from the former Specialty Mill site in Arcata, California (Humboldt County Assessor's Parcel Number [AP#] 505-161-11) (Figure 1) to the undeveloped area along the eastern boundary of ERS Metropolitan Mill A in Fortuna, California (portions of AP#s 205-111-12 and 205-181-01) (Figures 2, 3, and 4). The project site is situated in the SE 1/4, NE 1/4, Section 36, Township 2N, Range 1W, Humboldt Base and Meridian. Both sites are owned by ERS, and Mill A is zoned as heavy industrial (MH), with a land use designation of Industrial.

The proposed stockpile/potential bioremediation area is located in the undeveloped area along the eastern boundary of the active Mill A property, and is accessed through the Mill A internal road system (see Figures 2 and 3). The undeveloped area occupies a relatively flat fluvial terrace, ranging in elevation from 80 to 120 feet above mean sea level. Nearby drainages include northwesterly flowing Eel River located approximately 700 feet south of the site. Two unnamed ephemeral drainages, located approximately 2,000 and 4,000 feet, respectively, east of the site, are first order tributaries to the Eel River. No springs were observed at the site. A small erosional gully is located along the southern boundary of the site. There are no other surface drainage ways associated with the site. Based on examination of Federal Insurance Rate Maps, published by the Federal Emergency Management Agency, the proposed bioremediation site is not located in a 100-year flood plain.

APPENDIX M



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

SCALE: 1:24000

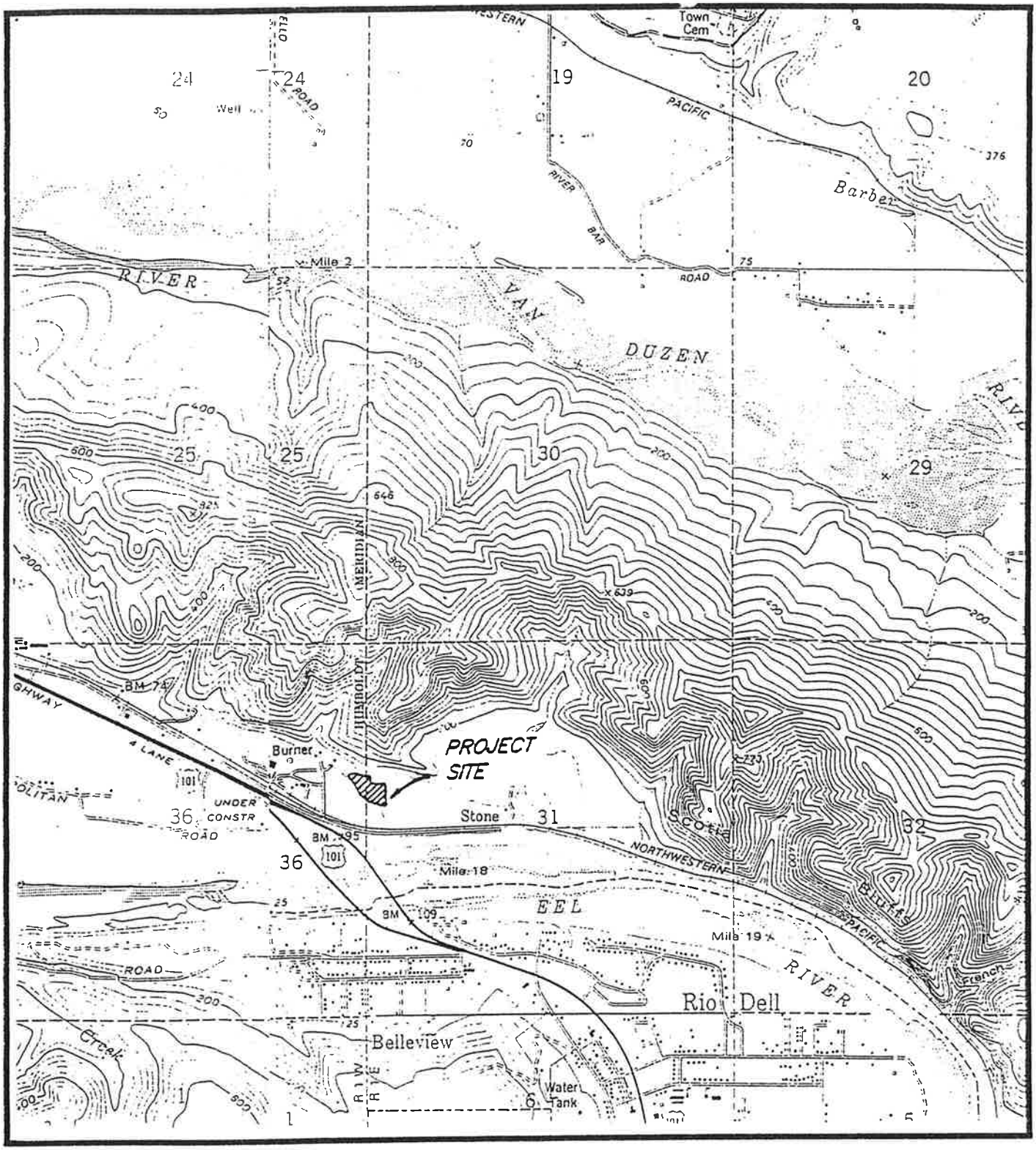
EEL RIVER SAWMILLS, INC.
REMEDIAL ACTION PLAN FOR FORMER
SPECIALTY MILL AT METROPOLITAN MILL A

FORMER SPECIALTY MILL
VICINITY MAP

SHN 930121.100
JULY 1996
FIGURE 1

SHN

APPENDIX M



FORTUNA QUADRANGLE
HYDESVILLE QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFORNIA

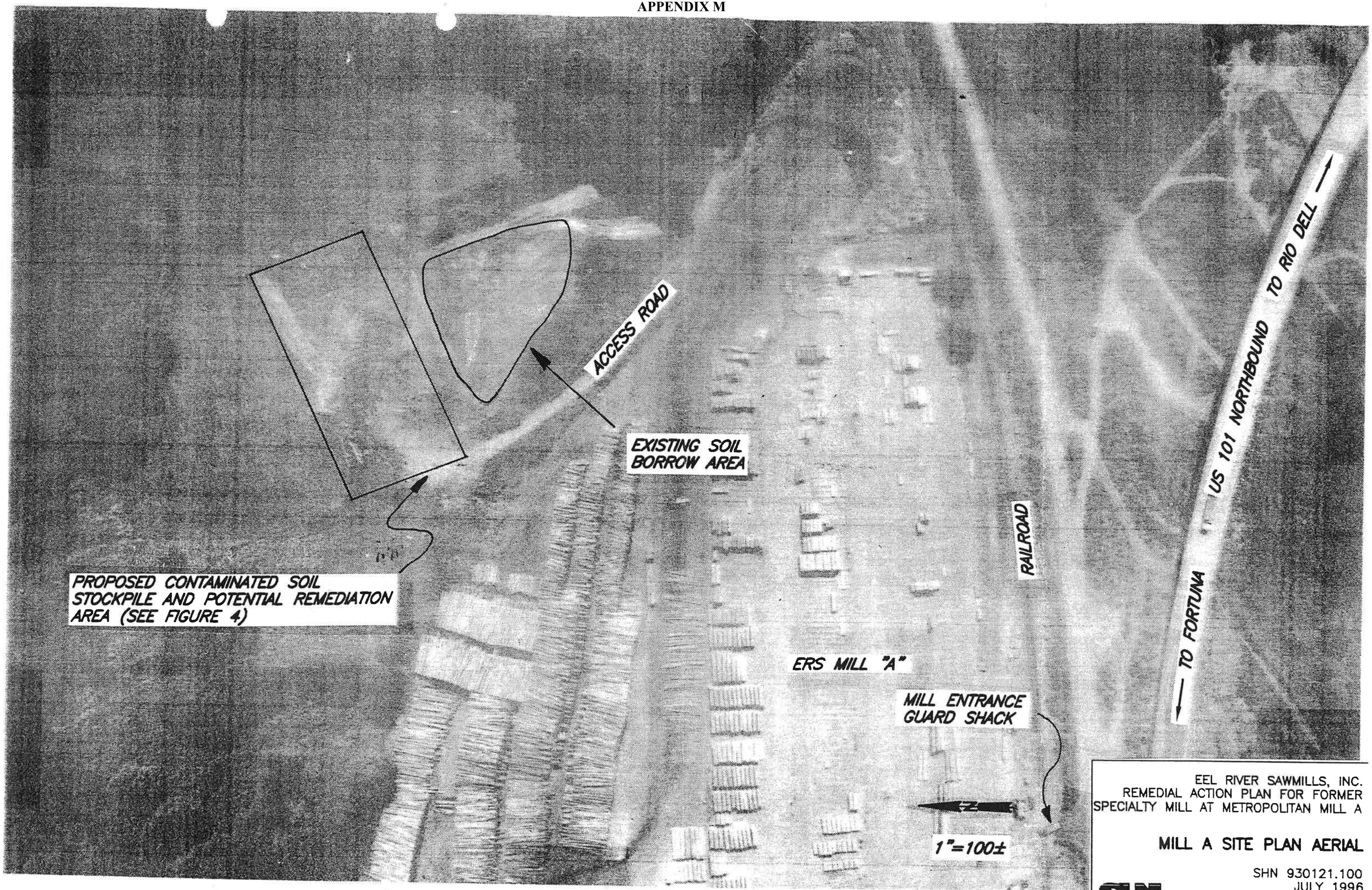
SCALE: 1:24000

EEL RIVER SAWMILLS, INC.
REMEDIAL ACTION PLAN FOR FORMER
SPECIALTY MILL AT METROPOLITAN MILL A

MILL A VICINITY MAP

SHN 930121.100
JULY 1996
FIGURE 2

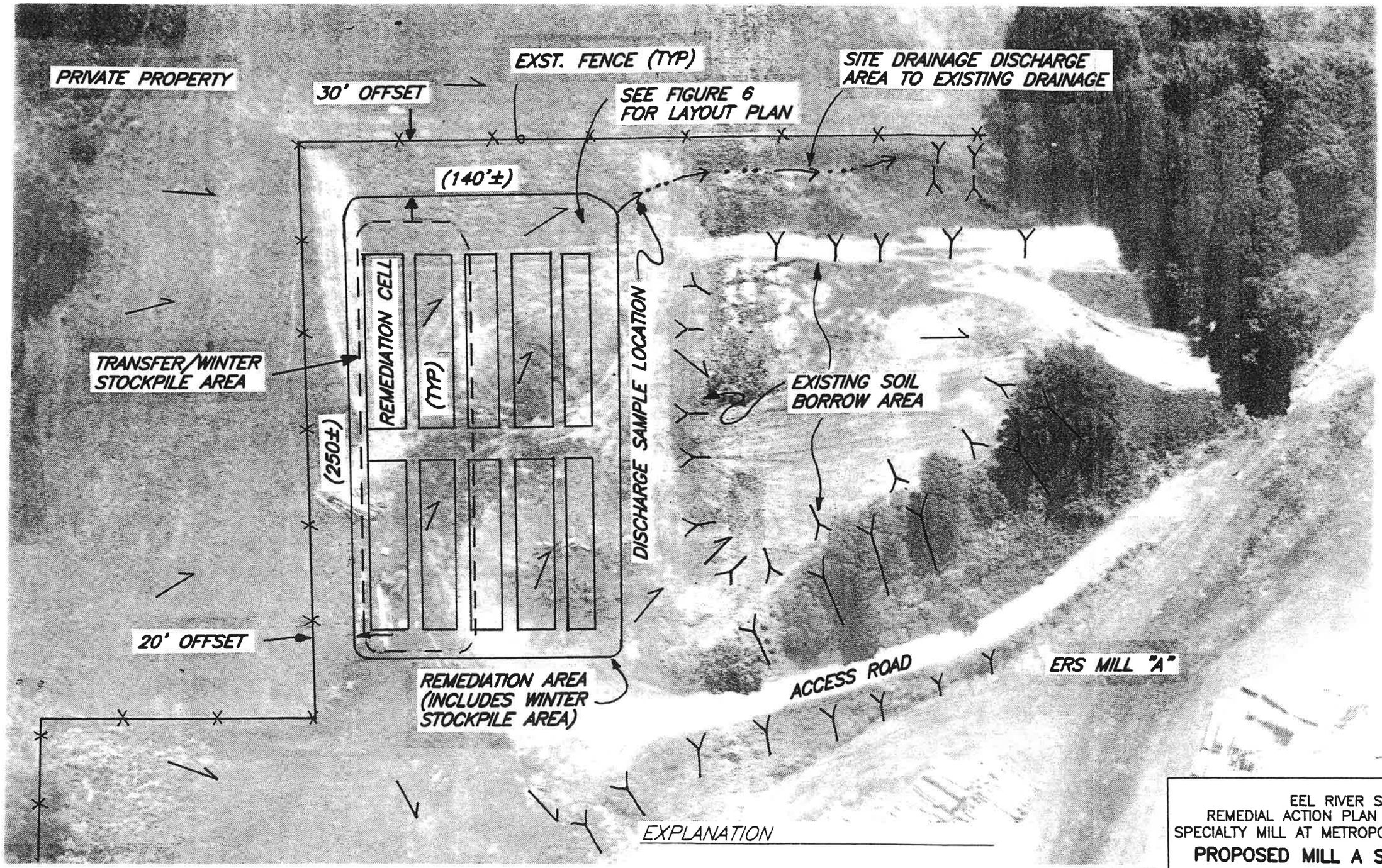
SHN



EEL RIVER SAWMILLS, INC.
REMEDIAL ACTION PLAN FOR FORMER SPECIALTY MILL AT METROPOLITAN MILL A

MILL A SITE PLAN AERIAL

SHN 930121.100
JULY 1996



EEL RIVER SAWMILLS, INC.
REMEDIAL ACTION PLAN FOR FORMER SPECIALTY MILL AT METROPOLITAN MILL A

PROPOSED MILL A STOCKPILE/ REMEDIATION AREA

SHN 930121.100
JULY 1996
FIGURE 4

SHN

Project Background

Areas of contaminated soil at the former Specialty Mill site have been physically and initially chemically characterized. Physical and initial, in situ chemical characterization is based on results of soil and groundwater sampling presented in the Initial Report of Findings for 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11, Formerly Specialty Mill (SHN, January 1995) and Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue, Arcata, California (SHN, August 1995). A summary of analytical data through February 1996 is presented as Table 1 in Appendix B. Chemical constituents of concern include the petroleum hydrocarbons as gasoline, diesel, motor oil, and grease. SHN conducted additional soil sampling for confirmation of lateral and vertical extent of contamination during June 1996. Final analytical results of that sampling are currently being reviewed and do not indicate substantial differences from previous work. Analytical results of the June 1996 sampling are presented in Appendix C, along with a site map showing sampling locations. SHN will review this information and submit a letter report of findings to HCDEH in the near future.

SOIL REMEDIAL ACTION PLAN

Rationale for Soil Remedial Action

The proposed transfer of contaminated soil from the former Specialty Mill site to the Mill A site, with subsequent bioremediation of the soil at Mill A, or disposal at an approved landfill facility, will allow for the cleanup of a former industrial site ("Brownfield"). Soil remedial action will enhance the watershed adjacent to an existing anadromous fish run stream, being rehabilitated by the City of Arcata, and allow the land to become marketable for future development.

Soil samples to date, collected from the former Specialty Mill areas of concern, indicate levels of petroleum hydrocarbon contamination in the gasoline, diesel, and motor oil ranges that require some form of mitigation to the soils proposed for excavation prior to their reuse, or, disposal at an appropriate landfill. ERS has chosen to use (pending stockpile sample analysis review), a semi-passive approach to contaminated soil remediation in the interest of keeping mitigation costs down while using available non-active land areas for the potentially long duration remediation process. Alternatively, soil disposal at an approved landfill will be considered. Should remedial action processes available to ERS in the future indicate that a change would be beneficial, there will be little problem with altering or abandoning the presently proposed soil remediation process.

Description of Soil Remedial Action

Areas of concern at the former Specialty Mill, as identified in previous work, will be excavated and verification soil sampling conducted as delineated in the Work plan for Continued Subsurface Investigation and Initial Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Arcata CA, Humboldt County AP# 505-161-11, (SHN, March 1996). Soil will be excavated, from the various areas of concern, until the following levels of contaminant, as shown in Table 1, are documented.

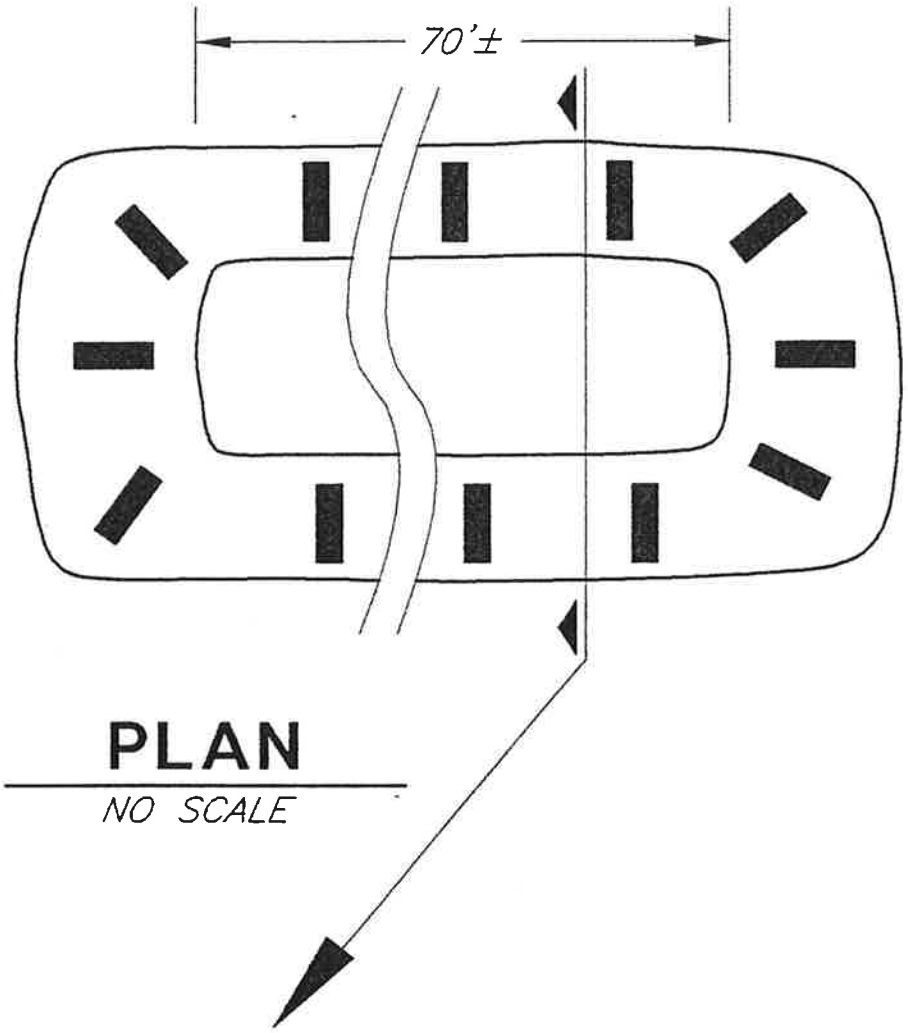
TABLE 1 SOIL CLEANUP LEVELS	
Constituent	**Target Cleanup Level**
Gasoline	<1.0 ug/g
Diesel	<1.0 ug/g
Motor oil	<10. ug/g
Benzene	<0.005 ug/g
Toluene	<0.005 ug/g
Ethylbenzene	<0.020ug/g
Total xylenes	<0.005 ug/g
Lead	<30 mg/kg

ERS proposes to overexcavate only those areas of soil contamination that are within the former fuel tank, vehicle maintenance, and debarker areas, as indicated by previous soil sampling as immediate areas of concern. Remaining isolated areas of motor oil and diesel petroleum hydrocarbon contamination will be addressed when a more site specific development plan is developed by ERS or a future property buyer. Groundwater quality has been documented as not adversely impacted at any area except the fuel tank area (scheduled to be overexcavated). ERS anticipates conditions of regulatory closure to be promulgated based upon this remedial action approach.

Contaminated soil excavated from the former Specialty Mill site will be appropriately secured and trucked to Mill A, and temporarily stockpiled pending final approval of the RAP and ROWD. Depending upon the weather window, the contaminated soil will be either winterized and stockpiled until Spring 1997, or the bioremediation cells will be constructed and operations will commence prior to October 1, 1996. If disposal of the contaminated soil, in part or whole, at an approved landfill becomes more cost effective and time efficient, ERS will pursue that remedial action in lieu of bioremediation at Mill A.

Soil Characterization and Stockpiling

For chemical characterization, stockpiled soil will be divided into 80 to 90 cubic yard increments, with each incremental volume representing a specific source area and thence a unit cell. The 80 to 90 cubic yard increments will be further divided into four (minimum) quadrants. Soil sampling for chemical characterization will be conducted by qualified personnel. Collected samples will be delivered in iced coolers, under appropriate chain-of-custody documentation, to State certified North Coast Laboratories, Ltd. (NCL), in Arcata, California, within 24 hours of collection. Soil samples will be collected using a decontaminated stainless steel trowel to retrieve samples from freshly exposed portions of the stockpile and placing the soil in appropriate, laboratory provided sample containers. Decontamination of sampling gear will be conducted between moves to different source sampling locations by first washing with a laboratory grade detergent solution, and final rinsing with distilled water. Discrete soil samples will be laboratory composited, and



PLAN

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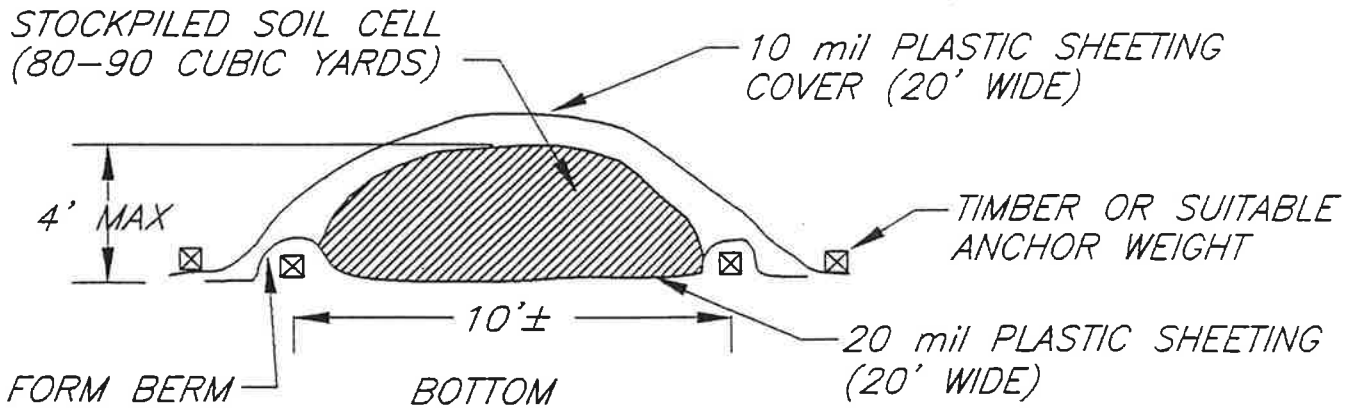

SECTION

NO SCALE

EEL RIVER SAWMILLS, IN
REMEDIAL ACTION PLAN FOR FORME
SPECIALTY MILL AT METROPOLITAN MILL

STOCKPILE WINTERIZATIO

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JULY 199

FIGURE

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analyzed for Total Petroleum Hydrocarbons as gasoline (TPHG-EPA method 5030), diesel (TPHD-EPA method 3550), motor oil (TPHMO-EPA method 3550), benzene, toluene, ethylbenzene, and total xylenes (BTEX-EPA method 8020 modified.), and lead (Pb-EPA method 7421), depending upon the area from which the soil was excavated.

Soil to be stockpiled over winter will be placed on top of 20 mil plastic sheeting, and fully enveloped within 10 mil plastic sheeting to prevent rainfall and storm runoff from impacting the stockpiled soil. A stockpile detail is illustrated on Figure 5. The area around the stockpile(s) will be graded to preclude stormwater runon from contacting contaminated soil areas.

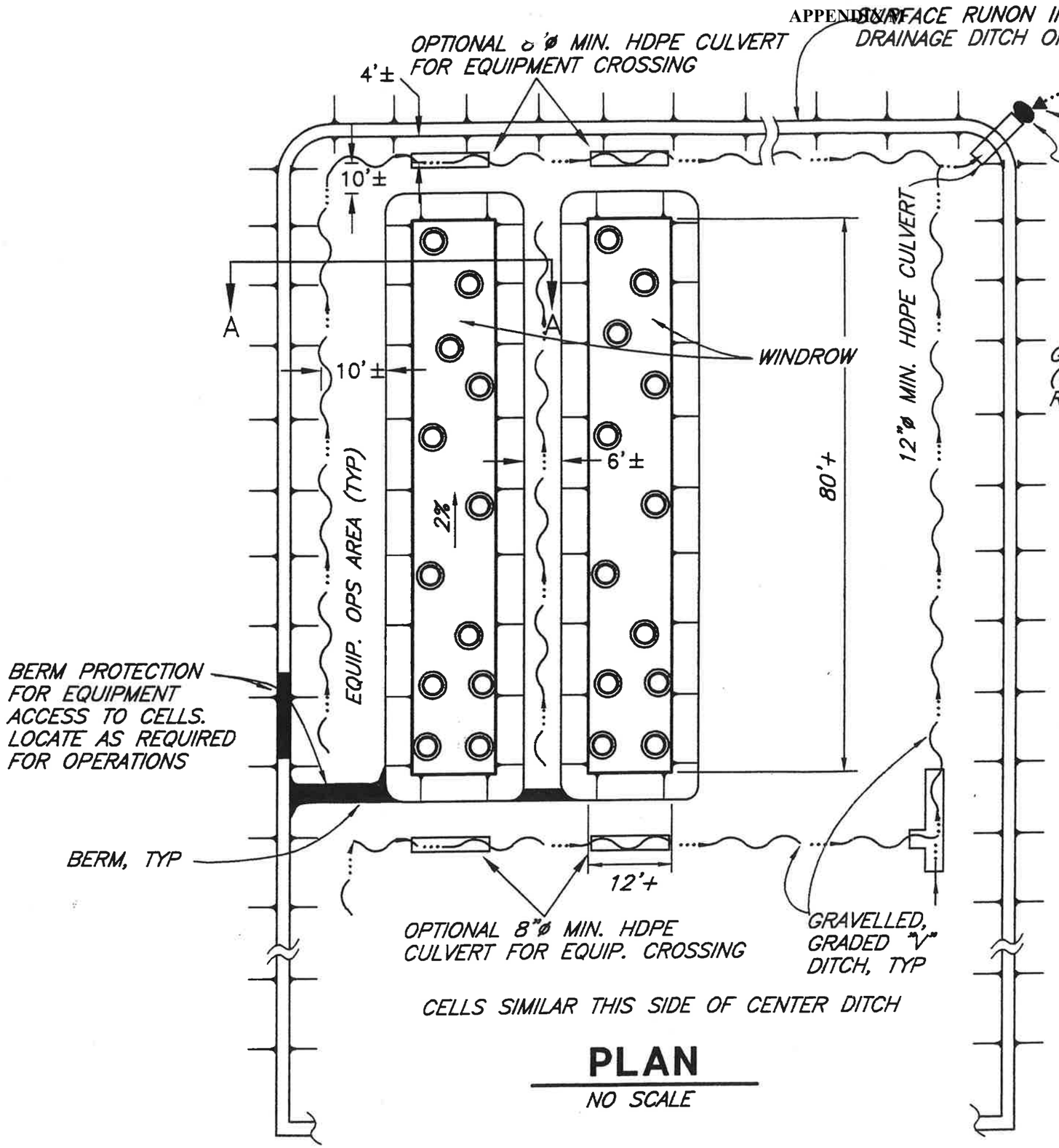
Construction of Bioremediation Units

Construction of the proposed bioremediation cell units, if used, will begin upon approval from the HCDEH and RWQCB, weather dependent.

One proposed method of treating the petroleum hydrocarbon contaminated, predominantly coarse textured (sand and river run gravel, with some silts and clay) soil is enhanced bioremediation. This method will consist of stockpiling the soil in small unit cells (windrows), mixing the soil with water and wood shavings, and periodic rototilling and/or disking. Mixing wood shavings with the soil is expected to provide bulk. Additional nutrients may be provided in the form of cow manure and phosphoric acid, mixed with water at a dilute concentration during moisture conditioning. Rototilling and /or disking will provide aeration. During the summer months, the soil will be left uncovered to further aerate. Aeration will be the primary activity conducted to enhance the bioremediation process. During the winter months the soil will be covered to prevent rainwater contact.

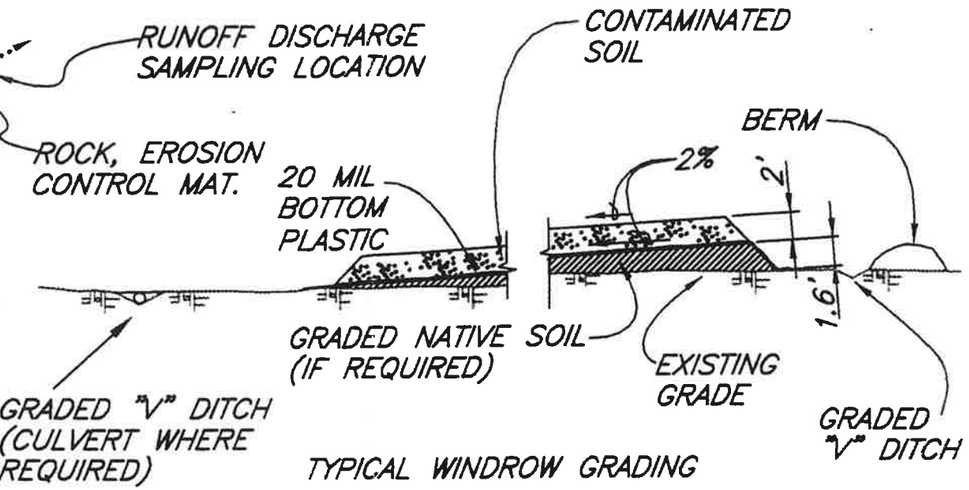
There will be approximately ten (10) to twelve (12) windrows each containing approximately 80 to 90 cubic yards of contaminated soil mixture. Each windrow working section will be approximately 12 feet (minimum) wide by 80 to 90 feet long. The maximum depth of contaminated soil in each windrow will be 24 inches, as dictated by the disking or rototilling equipment. The windrows will be spaced approximately 6 feet apart, or as allowed by site physical constraints. Based on these dimensions, the windrows will cover an area of approximately 35,000 square feet (250 feet wide by 140 feet long) (Figure 6).

Prior to placing the soil in windrows, the bioremediation area will be graded. Grading will be conducted to create a containment area and to control runon and runoff. To control runon, an interceptor drainage ditch or soil berm (as specific site layout dictates), will be constructed around the perimeter of the windrow treatment area. To control runoff, the ground surface where the windrows are located will be graded at an approximately 2 percent (minimum) slope in one direction. Grading will promote runoff by ensuring that a slope is maintained along the length of the windrows. Ditches will be cut between the windrows. The sloped area and ditches will allow runoff to be concentrated and discharged from the treatment area at one location (Figure 6). Rock will be placed in the drainage ditch leaving the treatment area to dissipate water energy, which has the potential to cause soil erosion.



PLAN

NO SCALE



TYPICAL WINDROW GRADING

SECTION A

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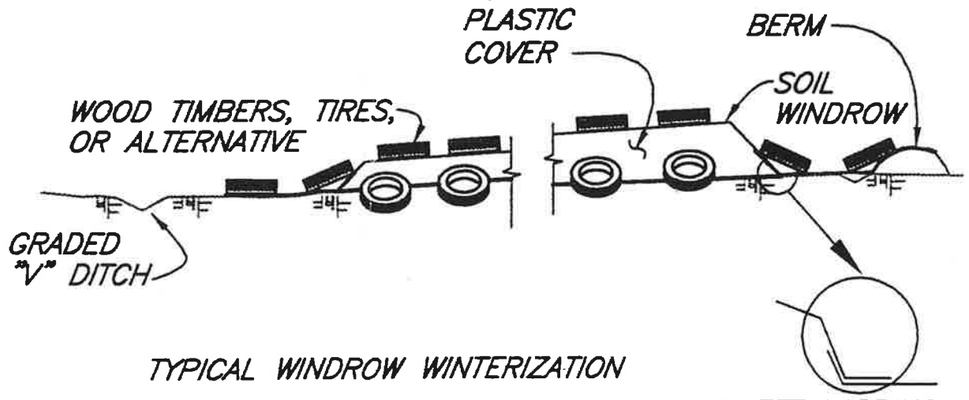

TYPICAL WINDROW WINTERIZATION

SECTION A

NO SCALE

EEL RIVER SAWMILLS, INC.
REMEDIAL ACTION PLAN FOR FORMER SPECIALTY MILL AT METROPOLITAN MILL A

PROPOSED BIOREMEDIATION SITE DEVELOPMENT PLANS

SHN 930121.100
JULY 1996
FIGURE 6

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After grading the bioremediation area, 20 mil polyethylene plastic sheeting (individual sheets measure 20 feet wide by 100 feet long) will be placed on the ground surface. Contaminated soil will be placed in a 4 inch minimum thick lift on top of the plastic to serve as an operations layer. Subsequently, a wood shavings layer (2 to 4 inches thick) will be placed on the contaminated soil. An approximately 10 inch thick lift of contaminated soil, with water added to provide dust control and working consistence, will be placed on top of the first layer, and another shallow layer wood shavings will be added. This will be covered by another 10 inch thick layer of contaminated soil and additives. The soil mixture (approximately 80% soil, 20% wood chips) will then be rototilled to homogenize the soil with the wood shavings. No other formulation of additives will be introduced during the initial construction. Future potential soil amendments will be considered and discussed with HCDEH pending results of the first year operation sampling data. Each windrow will be covered by another 20 feet by 100 feet, 10 mil sheet of polyethylene plastic, as will the operations access ways, prior to the wet weather season. The edges of the plastic will be folded under and anchored using tires (or alternate weight) placed around the perimeter and across the top (Figure 6).

Dust control during grading and cell construction will be provided by periodic site watering. Discussion between SHN and the North Coast Unified Air Quality Management District (NCUAQMD) indicates that a special operating permit will most likely not be required due to the remote location and the lack of volatile contaminants documented to date. The NCUAQMD will review this document and make a final decision prior to cell construction. Security of the treatment area is virtually in place, with fencing on the east and south sides, and secured mill entry on the west and north portions of the site.

Management

During the winter rainy season, October 1 through May 15, the soil will be kept covered to prevent precipitation from contacting the soil. If weather permits during January or February, the windrows may be uncovered one at a time to allow the soil to be rototilled. After rototilling the windrows and operations access ways will be covered once again for the duration of the rainy season.

Once the windrows are constructed or uncovered, they will be periodically rototilled. Rototilling is expected to be conducted a minimum of once every four to six weeks. A farm tractor or other equipment with a disk or rototiller attachment will be used to mix and aerate the soil. The arrangement of the windrows within the containment area will allow the equipment to pass between windrows without leaving the containment area. This will reduce the potential for tracking contaminated soil beyond the limits of the containment area. Soil tracked between cells will be generally confined to the access corridors as shown on Figure 6. Equipment will be broomed prior to leaving the containment area to minimize fugitive soil from leaving the site area. The containment berm will be protected at equipment access points by construction of special rocked or ramped sections.

Monitoring

During treatment, samples will be collected to assess the effectiveness of the treatment process. These samples will be collected as required to provide information to the discharger on the treatment process. The treated soil will be sampled at the beginning of the aeration season, and at the end of the season, prior to winterization, to document the concentrations of contaminants during treatment. Depending upon the original chemical characterization of the specific cell, the samples will be analyzed for TPHD, THMO, TPHG, and BTEX, with moisture content and soil pH analyzed on all samples. Additionally, the oxygen and carbon dioxide levels in the soil mixture will be checked as indicators of biological activity.

Storm water runoff from the operations area will be monitored on a weekly basis during wet weather conditions. Integrity of the operations winterization cover will be checked on the same schedule and problem areas will be repaired or otherwise mitigated. ERS personnel will check drainage ditches to ensure proper operation and hydraulic conveyance of storm water. The discharge from the operations area will be sampled once a month, during the first runoff producing rainfall of that month, at the downstream side of the main conveyance ditch(es) prior to flowing off site of the operations area. Surface water samples will be analyzed for TPHG, TPHD, TPHMO, and BTEX.

Data collected from these sampling events will be submitted, as periodic letter updates, to HCDEH for review and discussion with ERS. If the process is amended to become more technically involved, ERS will provide HCDEH with updated monitoring methodology and reporting schedules.

UNIT CLOSURE AND REPORT OF REMEDIAL ACTION

After the process has been shown to be effective, treated soils will be sampled to document the absence of the specified contaminants at the target cleanup levels. Two soil samples, each composited from four discreet areas, will be collected from every windrow (for every approximate 80 cubic yards of soil mixture). Each soil sample will be analyzed for TPHG, TPHD, TPHMO, BTEX, and Pb, depending upon the original documented chemical characterization of the specific cell.

Reuse of the remediated soil will depend upon the Mill A need for soil fill at the time of closure. The soil may be used for intermediate woodwaste landfill cover, paved or unpaved log deck grading material, road subgrade material, or general site fill. Each of these potential uses will require a negotiated clean up level to be realized before implementation of soil reuse. ERS will continue the process of outlining proposed remediated soil cleanup levels during the coming months as mill operations planning are reviewed. Proposed remediated soil cleanup levels will then be presented to the HCDEH for review and discussion.

Upon soil removal from the site, the stockpile/bioremediation area will be sampled to determine the presence or absence of fugitive soil contamination. Soil sampling will be conducted for the constituents previously noted. One soil sample will be collected for every 1,000 square feet of surface area. Sets of four such samples will be laboratory composited into one sample for analysis. Review and submittal to HCDEH of the analytical results will allow for determination of site closure.

A remedial action report of findings will be prepared and submitted to HCDEH documenting the completed remedial action. The report will include all sampling information, laboratory analytical reports, verification sampling, locations, and a request for site closure.

APPENDIX M

REFERENCES

SHN Consulting Engineers & Geologists, Inc. (January 1995). Initial Report of Findings for 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11, Formerly Specialty Mill. Eureka: SHN.

---. (August 1995). Initial Groundwater Investigation Report of Findings for 2000 Foster Avenue, Arcata, California. Eureka: SHN.

---. (October 1995). Report of Waste Discharge for Universal Forest Products (Former), Windsong Subdivision, Case No. 1NHU489. Eureka: SHN.

---. (March 1996). Work Plan for Continued Subsurface Investigation and Initial Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Arcata, CA, Humboldt County AP# 505-161-11. Eureka: SHN.

---.(May 1996). Report of Waste Discharge for Transfer of Soil from Eel River Sawmills, Inc., Former Specialty Mill in Arcata, To Metropolitan Mill A in Fortuna, Humboldt County, California: Eureka: SHN.

APPENDIX A

CORRESPONDENCE

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

2 July 1996

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: **Eel River Saw Mills Inc. -- Specialty Mill Site**
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the March 1996 *Work Plan for Continued Subsurface Investigation and Initial Remedial Action* and the May 1996 *Report of Waste Discharge* prepared by SHN Consulting Engineers and Geologists (SHN).

A. Work Plan

Verbal approval of the work plan for further investigation was given in a telephone conversation with Martin Lay of SHN on 19 June 1996 with the following understandings.

- Soil cuttings are to be placed in drums or stored in a secured area. All drums stored on site are to be adequately secured from public access. We understand that ERS is fabricating security gates for the site.

- Soil samples will be collected in liners mounted in driven samplers as opposed to collected from unlined samplers to prevent loss of volatiles.

- Samples collected at the Debarker Slab will include lead analysis.

B. Remedial Actions

Remedial actions are addressed in both documents. We have some concerns that will need to be addressed prior to beginning remedial action at the Arcata Specialty Mill site and the proposed treatment facility at the Fortuna Metropolitan Mill 'A' facility. A final Remedial Action Plan (RAP) for treatment of the soil will need to be submitted to the HCDEH for review once the Report of Waste Discharge (ROWD) is approved by the Regional Board. We understand SHN will prepare a remedial action plan once the current investigation is complete. Our comments below are intended to provide assistance in development of the RAP and shorten the review and comment period.

Initial Remedial Action

- The Initial Remedial Action Plan (IRAP) has identified overexcavation as the chosen remedial alternative with off-site treatment of contaminated soil. The specific off-site treatment method is identified and discussed in the ROWD. The ROWD will need to be approved by the NCRWQCB prior to transporting contaminated soil to the Metropolitan Mill 'A' facility.

- Confirmation sampling in the Debarker Slab will need to include lead analysis.

- Cleanup levels need to be established prior to beginning overexcavation of the contaminated areas. We understand the proposed primary use of the property is redevelopment as residential with a portion of the property adjacent to Janes Creek (McDaniel Slough) designated as riparian habitat. Cleanup levels need to be protective of human and environmental health.

Report of Waste Discharge and Soil Treatment

- As noted above, the ROWD needs to be approved by the NCRWQCB prior to beginning soil treatment.

- The resolution of Figure 3 in our copy of the ROWD, illustrating the location of the treatment facility at the Metropolitan Mill 'A' facility, is extremely poor. The resolution of this figure needs to be upgraded in the RAP.

- The ROWD states the tilling equipment will be cleaned before leaving the equipment area but does not address cleaning equipment between windrows,this indicates that contaminated soil may be tracked by equipment in to the area between the windrows, where it may come in contact with native soil and run-off waters. We understand water from the run-off collection system will be directly discharged from the treatment area, apparently without sampling or treatment. Run-off waters need to be contained and sampled prior to discharge. Contaminated run-off waters may need treatment before discharge.

- We understand the proposed treatment area is unpaved. Please describe what precautions will be taken to prevent puncture of the liner by equipment. We recommend a layer of sand be placed beneath and on top of the plastic liner.

- Preservation of containment berm integrity during equipment entrance and exits needs to be addressed.

- The treatment area needs to be adequately secured from unauthorized entry.

- Dust and moisture control need to be addressed in the RAP. A permit may be required from the North Coast Unified Air Quality Management District during treatment. Please contact the NCUAQMD at 707.443.3093.

- We understand soil from the Metropolitan Mill 'A' fueling area will also be treated in this area. Please provide information on contaminant type, concentrations and soil types from this area.

- A significant portion of the soil proposed for treatment are described as silt and clay. This may slow remedial progress. SHN proposes to add sawdust as a bulking agent and nutrient agents to the amend the soil during treatment. This appears appropriate. The RAP should address the nutrient formulation, anticipated frequency of aeration (tilling), nutrient, bulking agent and moisture addition.

Monitoring Plan

- SHN states that samples will be collected to assess treatment effectiveness. The specific methods of how effectiveness of biotreatability will be determined need to be adequately addressed. A detailed remedial progress plan with milestone report periods needs to be developed for the proposed land treatment unit which should include (but not necessarily limited to):
  - constituent concentrations and reduction;
  - biodegration conditions;
  - vapour emission monitoring;
  - run-off water sampling;
  - Soil pH and moisture content;
  - bacterial populations;
  - nutrient concentrations and needs.

- Target cleanup levels and disposition of the treated soils need to be addressed. Previous experience has indicated that reduction of contaminant concentrations for TPH greater than 95 percent may be difficult to achieve. This eventuality should be considered when evaluating ultimate disposition of treated soil. For example, treated soil may be placed beneath a paved log deck. Your consultant can provide you further guidance on this subject.

- Verification samples should also be taken from beneath the windrows once treatment is completed. Your consultant can provide additional guidance on this subject.

Please submit the remedial action plan **by August 30, 1996.** I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin E. Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
12518.003/697

APPENDIX B

SUMMARY OF ANALYTICAL RESULTS THROUGH FEBRUARY 1996

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl-benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(ft)**		**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(ug/g)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
TP-FTA1	2.0	02/17/94	500 (a)	--	19 (e)	--	<0.03	<0.03	<0.03	<0.03	--	--	--	--	--	--
TP-FTA1	5.0	02/17/94	250 (a)	--	220 (e)	--	<0.5 (g)	<0.5 (g)	<0.5 (g)	<0.5 (g)	--	--	--	--	--	8.6
TP-ST	2.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	82	98	61	8.4
TP-ST	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	99 (i)	110	62	9.1
TP-VM4	2.0	02/17/94	--	140 (h)	--	82	--	--	--	--	--	<1.0	25	29	38	20
TP-VM4	4.0	02/17/94	--	<10	--	50	--	--	--	--	--	<1.0	76	88	74	9.7
TP-DBW	2.0	02/17/94	--	130 (h)	--	82	--	--	--	--	--	<1.0	25	28	30	4.8
TP-DBW	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	80	87	58	6.4
TP-DBE	2.0	02/17/94	--	--	--	58	--	--	--	--	--	<1.0	22	45	270	51
TP-DA1	2.0	02/17/94	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
TP-DA2	2.0	02/17/94	--	--	--	95	--	--	--	--	--	--	--	--	--	--
TP-1	1.5	05/17/94	19 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	50 (f)
TP-1 (DUPE)	1.5	05/17/94	--	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	29 (f)
TP-1	4.0	05/17/94	16 (a)	--	3.6 (e)	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	7.6
TP-2	1.0	05/17/94	1.9 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	14
TP-2	4.0	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.0
TP-3	1.0	05/17/94	160 (d)	--	19	--	<0.005	<0.005	<0.10 (g)	<0.10 (g)	--	--	--	--	--	5.6
TP-3	3.2	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	10
TP-3	4.5	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.1
TP-4	2.0	05/17/94	8.5 (d)	200	--	--	--	--	--	--	--	--	--	--	--	--
TP-4	4.5	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	1.3	05/17/94	41 (d)	510	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	4.4	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-6	1.7	05/17/94	24 (d)	150	--	--	--	--	--	--	--	--	--	--	--	--
TP-6 (DUPE)	1.7	05/17/94	5.6	48	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX M

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-6	4.3	05/17/94	49 (d)	820	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	1.2	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	4.9	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	2.7	05/17/94	280 (d)	3400	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	4.5	05/17/94	270 (d)	1700	<1.0	--	<0.050	<0.050	<0.050	<0.025	<0.050	--	--	--	--	--
TP-9	1.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	10
TP-9	4.8	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	6.4
TP-10	1.1	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-10	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	4.3	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	2.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	4.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	1.4	05/18/94	<5.0	210	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	1.7	05/18/94	17 (d)	160	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	4.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	1.1	05/18/94	3.0 (d)	35	--	--	--	--	--	--	--	--	--	--	--	--
TP-17 (DUPE)	1.1	05/18/94	3.2 (d)	28	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	3.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX M

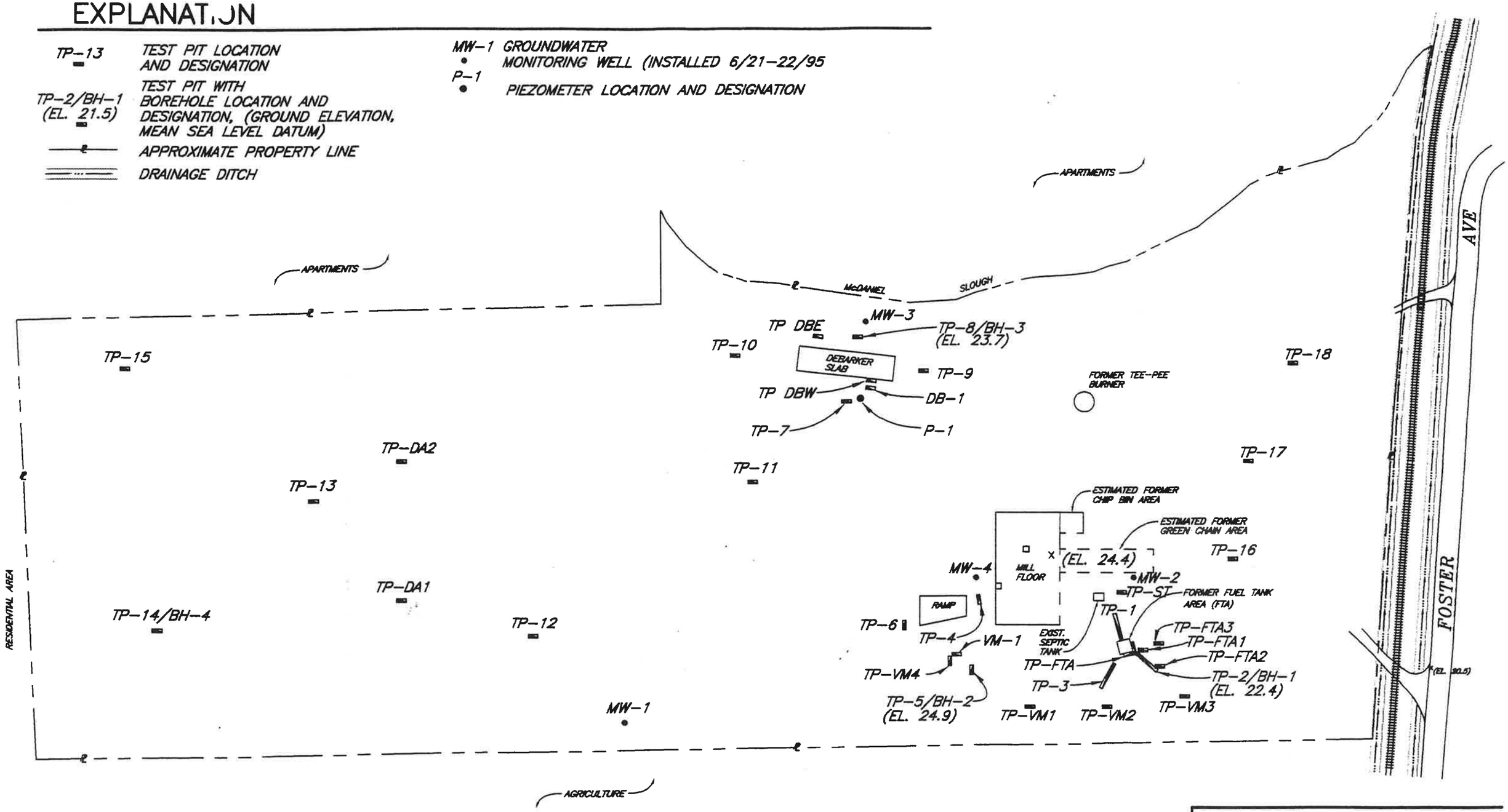
SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	**8270	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MW-1	1 - 1.5	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	1.5 - 2	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	0.5 - 1	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	51	62	60	11
MW-1	9.5 - 10	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	9 - 9.5	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8.5 - 9	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	72	83	77	10
MW-2	3.5 - 4	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-2	3 - 3.5	06/21/95	13 (b)	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2.5 - 3	06/21/95	--	--	--	--	--	--	--	--	--	--	--	--	--	18
MW-3	1.5 - 2	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	1 - 1.5	06/22/95	<1.0	24	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	0.5 - 1	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	27	30	65	22
MW-3	7 - 7.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	6.5 - 7	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6 - 6.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	79	110	65	9.5
MW-3	7.5 - 7.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
MW-3	8 - 8.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-3	17 - 17.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	16.5 - 17	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	16 - 16.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	88	110	71	11
MW-4	4.5 - 5	06/22/95	--	--	1.2 (j)	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-4	4 - 4.5	06/22/95	38 (a)	26	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5 - 5.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-4	3.5 - 4	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	74	90	74	10
MW-4	5.5 - 5.75	06/22/95	--	--	--	3600	--	--	--	--	--	--	--	--	--	--
VM-1	1.5	06/22/95	--	--	--	82	--	--	--	--	--	--	--	--	--	--
DB-1	1.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--

APPENDIX M

EXPLANATION

- TP-13 — TEST PIT LOCATION AND DESIGNATION
- TP-2/BH-1 (EL. 21.5) — TEST PIT WITH BOREHOLE LOCATION AND DESIGNATION, (GROUND ELEVATION, MEAN SEA LEVEL DATUM)
- ℄ — APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- MW-1 — GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95
- P-1 — PIEZOMETER LOCATION AND DESIGNATION



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

SITE PLAN (PREVIOUS WORK)

SHN 930121.100
JULY, 1996

FIGURE 2

APPENDIX C

SUMMARY OF ANALYTICAL RESULTS
JUNE 1996 SAMPLING

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, JUNE 1996 SAMPLING

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Cadmium[1] (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(Inches)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
S-102	12	6/25/96	12 (C)	150 (f)	--	--	--	--	--	--	--	--	--	--
S-102	52	6/25/96	<1.0	20 (f)	--	--	--	--	--	--	--	--	--	--
S-103	43	6/25/96	950 (a)	<500 (g)	--	--	--	--	--	--	--	--	--	--
S-103 (QA-1)	43	6/25/96	150 (a)	37 (f)	--	--	--	--	--	--	--	--	--	--
S-103	4 - 8	6/25/96	1.8 (d)	83 (f)	--	--	--	--	--	--	--	--	--	--
S-103	42 - 46	6/25/96	--	--	--	--	--	--	--	<2.0	72	88	73	9.6
S-104	42	6/25/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-104	6 - 8	6/25/96	<2.0 (e)	47 (f)	--	--	--	--	--	--	--	--	--	--
S-113	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-113	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-101	36	6/26/96	<1.0	15 (f)	--	--	--	--	--	--	--	--	--	--
S-101	6 - 8	6/26/96	2.5 (d)	190	--	--	--	--	--	--	--	--	--	--
S-112	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-112	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-105	36	6/26/96	<1.0	<10	--	--	--	--	--	<2.0	64	87	54	5.7
S-105	6 - 8	6/26/96	1.4 (d)	29 (f)	--	--	--	--	--	<2.0	38	47	59	14
S-106	6	6/26/96	<1.0	30 (f)	--	--	--	--	--	<2.0	43	47	66	25
S-106	48	6/26/96	<1.0	<10	--	--	--	--	--	<2.0	85	110	80	9.1
S-106 (QC-2)	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-107	6	6/26/96	1.2 (d)	83 (f)	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<2.0	47	56	160	29
SD-2		6/26/96	<1.0	15 (f)	--	--	--	--	--	--	--	--	--	--

APPENDIX M

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, JUNE 1996 SAMPLING, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Cadmium[1] (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	**(Inches)**		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SD-1		6/26/96	4.3 (d)	190 (f)	--	--	--	--	--	--	--	--	--	--
S-111	6	6/26/96	1.5 (b)	15 (f)	--	--	--	--	--	--	--	--	--	--
S-111	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-108	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-108	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-109	6	6/26/96	4.8 (d)	180	--	--	--	--	--	--	--	--	--	--
S-109	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-110	6	6/26/96	<1.0	58	--	--	--	--	--	--	--	--	--	--
S-110	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
Groundwater Samples			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
WP-3		6/25/96	1300 (a)	<500	62 (h)	<0.50	1.7	<0.50	<0.50	<0.020	<0.0050	<0.020	0.30	<0.020
WP-2		6/25/96	<50	<500	<50	<0.50	0.74	<0.50	<0.50	<0.020	<0.0050	0.027	0.12	<0.020
WP-1		6/26/96	<200 (e)	3800	<50	--	--	--	--	<0.020	<0.0050	0.020	0.090	<0.020

-- = Not tested

QA/QC = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesl. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

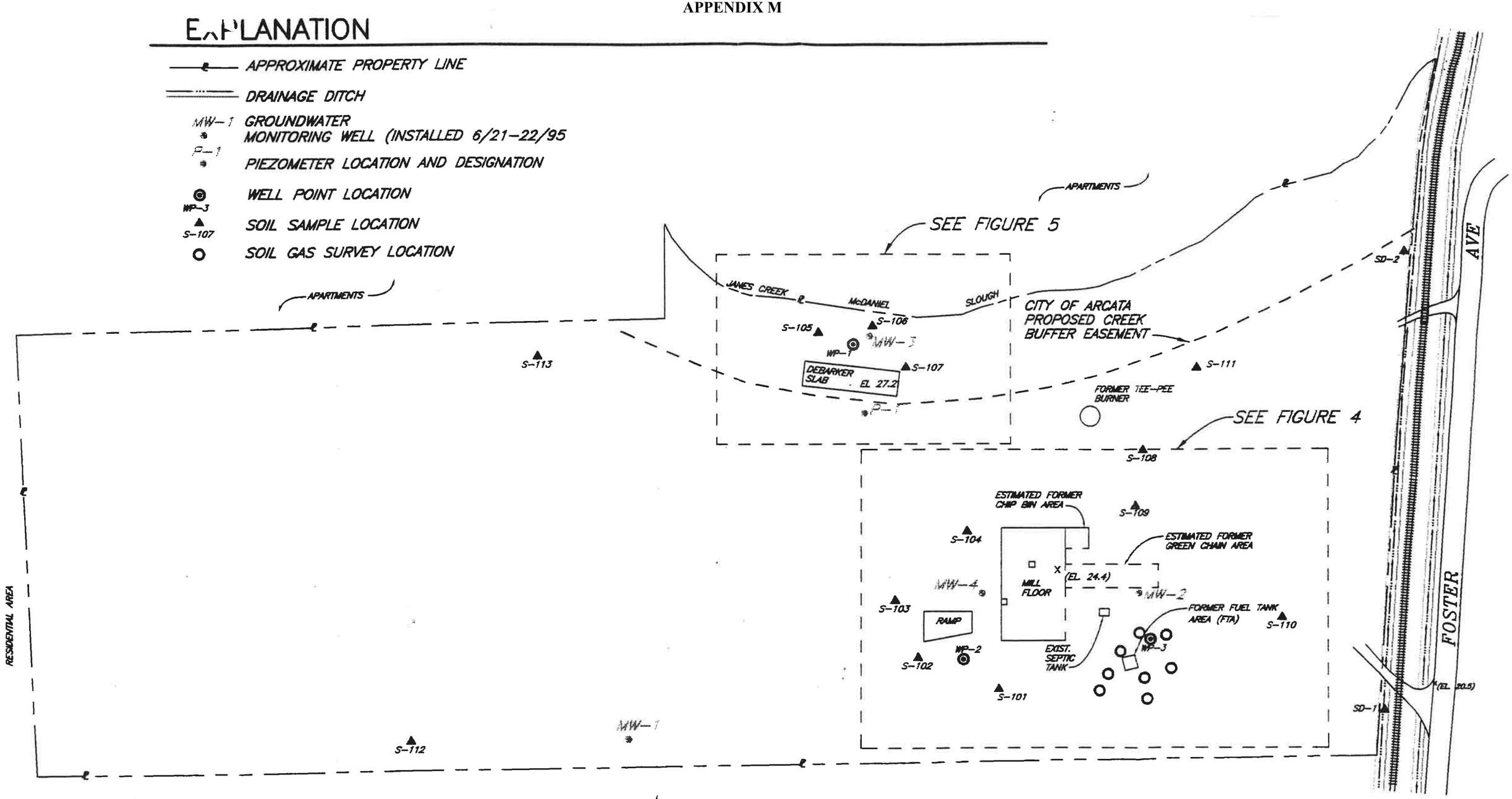
(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample was diluted due to the amount of material in the motor oil range.

(f) Sample does not have the typical pattern of fresh motor oil. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

(g) Sample was diluted due to the large amount of material in the diesel range.

(h) Sample does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

SITE PLAN
SAMPLING LOCATIONS
JUNE 1996

SHN 930121.100
JULY, 1996

FIGURE 3

930121.56

APPENDIX N

JULY 1997 SOIL EXCAVATION REPORT OF FINDINGS 2000 FOSTER AVENUE ARCATA, CALIFORNIA

Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

Prepared for:

EEL RIVER SAWMILLS, INC.

SHN
Consulting Engineers & Geologists, Inc.
812 W. Wabash
Eureka, CA 95501
707/441-8855

SEPTEMBER 1997

APPENDIX N

SHN
CONSULTING ENGINEERS
& GEOLOGISTS

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(916) 221-5424
FAX (916) 221-0135

John R. Seivage, PE
K. Jeff Nelson, PE
Roland S. Johnson, Jr. C.E.G.

Reference: 930121.200

September 18, 1997

Mr. Dale Dell'Osso
Humboldt County Department of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: JUNE 1997 SOIL EXCAVATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE, ARCATA, CALIFORNIA, HUMBOLDT AP #505-161-11, LOP CASE #12518 (FORMERLY SPECIALTY MILL)

Dear Mr. Dell'Osso:

The attached Report of Findings for the property located at 2000 Foster Avenue, Arcata, California, is being submitted by SHN Consulting Engineers & Geologists, Inc. for, and with the approval of Eel River Sawmills, Inc. (ERS).

The report presents results of soil excavation activities conducted in July 1997 on the subject property.

Please review the enclosed information and call me at 707/441-8855, or Dennis Scott (ERS) at 707/725-6911 if you have any questions. Thank you for your cooperation with this project.

Sincerely ,

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

Martin E. Lay, P.E.
Project Manager

MEL:ls:lms
Enclosure
cc w/enclosure: Dennis Scott, Eel River Sawmills, Inc.
Rick Azevedo, NCRWQCB
Steve Tyler, City of Arcata

G:\1993\930121\ROF.97

APPENDIX N

Reference: 930121.200

JULY 1997 SOIL EXCAVATION REPORT OF FINDINGS FOR 2000 FOSTER AVENUE ARCATA, CALIFORNIA

Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

Prepared for:

EEL RIVER SAWMILLS, INC.

Prepared by:

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash
Eureka, CA 95501-2138
707/441-8855

September 1997

QA/QC:FL

G:1993\930121\ROF.97

SOIL EXCAVATION REPORT OF FINDINGS
FOR 2000 FOSTER AVENUE, ARCATA, CALIFORNIA
Humboldt County AP# 505-161-11
LOP Case #12518
(Formerly Specialty Mill)

EXECUTIVE SUMMARY

Eel River Sawmill (ERS) is submitting the following summary of soil excavation activities conducted at the subject property. The work was conducted to allow ERS to proceed with obtaining regulatory clearance for residential type site development. The project site is an abandoned, historic, lumber mill. SHN has conducted a Phase I Environmental Site Assessment, initial Phase II field investigations, and groundwater investigation prior to the excavation work covered by this report of findings.

Specific areas of documented soil contamination include the historic fuel tank area, the vehicle maintenance area, the debarker area, isolated areas of the old log deck, the mill leachfield area, and isolated general site areas. The levels of soil contamination (petrochemical) at the fuel tank area, debarker area, and mill ramp area were sufficient to warrant remedial action.

Between July 7th, and July 17th, 1997, SHN personnel supervised the excavation and sampling of the three primary areas at the ERS Foster Avenue site. Excavated soil was transported for remediation to the ERS Mill "A" stockpile/remediation area in Fortuna, California. Clean backfill material was brought on site to be used to backfill each excavation to ground level.

Soil samples for laboratory analysis were collected from the sidewalls, and floor of each excavation. Soil samples were collected along each sidewall at approximate 30 foot intervals. Additionally, one soil sample was collected from each excavation base for each approximate 300 square feet of base area.

Based on the results of the soil samples collected from each excavation area, it was determined that the source area contaminated soil in each area had been removed, and that excavation could be stopped.

APPENDIX N

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LIST OF ILLUSTRATIONS

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INTRODUCTION

This Soil Excavation Report of Findings is being submitted by SHN Consulting Engineers & Geologists, Inc. (SHN), on behalf of, and with the approval of EEL RIVER SAWMILLS, INC. (ERS). It is being submitted to document July 1997 soil excavation activities conducted by SHN on the subject site. The site is under the Local Oversight Program (LOP) regulatory review of the Humboldt County Division of Environmental Health (HCDEH). See Appendix 1 for remedial action correspondence from regulatory agencies.

Work was conducted by SHN in general conformance with North Coast Export Specialty Mill Remedial Action Plan for Soil Corrective Action, July 1996, and Report of Waste Discharge for Transfer of Soil From Eel River Sawmills, Inc. Former Specialty Mill in Arcata, to Metropolitan Mill A in Fortuna, Humboldt County, California.

Included in this report of findings is a background history of the site, a description of the excavation activities, including excavation side-wall and floor sampling, a summary of the soil sample analytical results, site maps showing the sampling locations, and a discussion of results.

OBJECTIVE

ERS's ultimate objective with respect to the property is to be able to sell the property, potentially for future single or multiple family residential development. The objective of this excavation program was to remove regulated levels of petroleum hydrocarbon-impacted soil from the site.

SITE DESCRIPTION

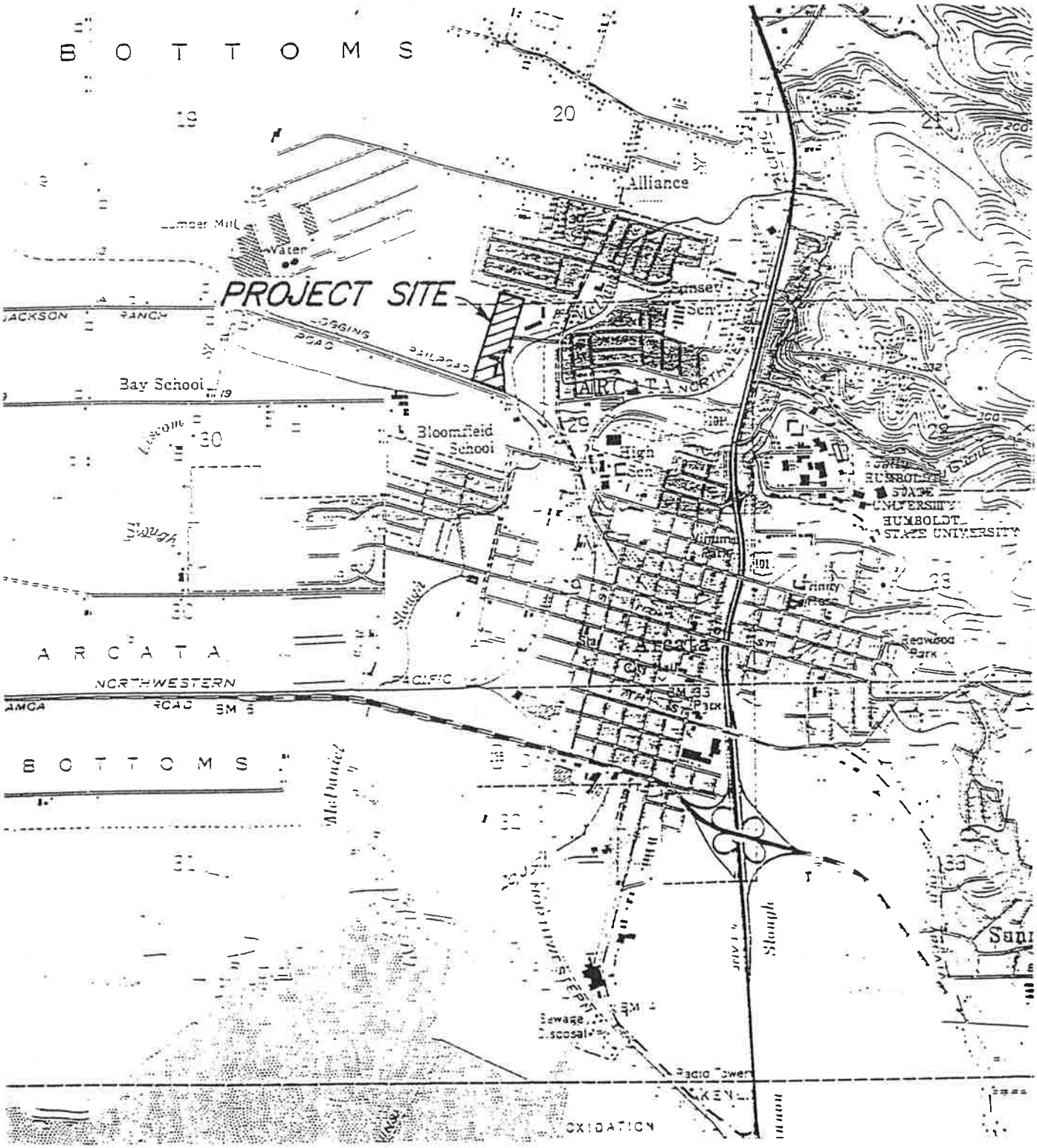
Site Location

As seen in Figure 1, the approximately 17 acre project site is located northwest of the City of Arcata, California, in the northwest 1/4 of Section 29, Township 6 north, Range 1 east, Humboldt Base and Meridian. The site is located at 2000 Foster Avenue, adjacent to the Arcata City limits, in an unincorporated area of Humboldt County. It is legally delineated as Humboldt County Assessor's parcel number 505-161-11.

Site Layout

The project site is situated at an elevation of approximately 20 to 25 feet above mean sea level, in the relatively flat alluvial plain of the Mad River referred to as the Arcata Bottoms. The Arcata Bottoms area gently slopes down in a westward direction.

APPENDIX N



ARCATA NORTH QUADRANGLE
ARCATA SOUTH QUADRANGLE
U.S.G.S. 7.5 MINUTE SERIES
(TOPOGRAPHIC) HUMBOLDT CO.
CALIFONIA
SCALE: 1:24000

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

VICINITY MAP

SHN 930121.100

SHN

FIGURE 1

Surface waters closest to the project site are McDaniel Slough (Janes Creek) located on the eastern boundary of the project site and Liscom Slough located approximately 0.75 miles west of the project site (Figure 1).

Local surface drainage for the project site is to the southwest, and the site is relatively flat with a general slope of less than 1 percent. An earthen ditch on the north side of the railroad tracks conveys drainage to the east, where it is received into the waters of McDaniel Slough/Janes Creek.

Site Hydrogeology

Subsurface investigations conducted by SHN provide the basis for the following discussion of site hydrogeologic conditions. The project site is located on a moderately sloping surface of a sequence of Holocene age stream deposits (Janes Creek alluvium). Sedimentary deposits encountered in test pits, well, and piezometer borings consisted of up to 4.25 feet of fill associated with previous industrial use of the site. The fill is comprised predominantly of sandy to silty gravel and well rounded cobbles to 6 inches in maximum dimension. Common wood debris (sawdust, bark, log trimmings, and milled lumber), occasional concrete rubble and metal debris were also encountered in the fill. The fill is underlain by alluvial deposits consisting of interbedded medium to very stiff silty to sandy clay, sandy to clayey silt, and dense silty to clayey sand.

Shallow, unconfined to semi-confined groundwater is present in the alluvial deposits. Based on measured groundwater elevations, shallow groundwater beneath the site flows predominantly towards the southeast. Confined groundwater is present in deeper alluvial deposits (encountered in well MW-3), and is separated from the shallow groundwater by low permeability silty clay and very clayey silt.

SITE BACKGROUND

Historical use of the property, until 1950, was open space, undeveloped land, and reportedly pasture (SHN, 1993). An old growth Redwood lumber mill was constructed on the site in 1951, and the mill, through various owners and changes in milling operations, continued operation until 1986 (most recently as Specialty Mill). The mill structures were then dismantled and the equipment was liquidated. Remnants of the mill operations existing on site at present include concrete slab foundations for the sawmill, log debarker, and mill infeed loading ramps. Additionally, the northern half of the site was used as a log deck area with rocked loading corridors and wood debris laden deck areas. No site development has been conducted since the mill dismantling operations.

A strip of land 100 feet wide, from the Janes Creek meander line westerly, for the reach on the subject project, is being managed by the City of Arcata as a stream restoration parkway with consent of (1995) ERS.

Findings of previous subsurface investigations were reported to HCDEH by ERS (SHN, January 1995, August 1995, and August 1996).

Several potential source areas of petrochemical contamination were identified in the previous investigations. Areas of potential concern are depicted on Figure 2, and include the following:

- **Fuel Tank Area.** Located at the southwest portion of the property, the fuel tank area included historic underground fuel tank (UST) and above ground tank (AGT) fueling facilities (contents reportedly gasoline and diesel, of unknown capacity; SHN, 1993).

- **Vehicle Maintenance Area (Mill Ramp Area).** The mill infeed ramp is located to the north of the former mill floor and was an access area for log infeed to the mill building. A remnant concrete and steel ramp remains. Vehicle maintenance was conducted in the vicinity of the west portion of the ramp area.

- **Debarker Area.** The log debarking structure was located northeast of the mill, adjacent to McDaniel Slough. A remnant concrete and steel foundation remains.

SOIL EXCAVATION PROGRAM

Based on the results of soil and groundwater sampling conducted in February and May 1994, June 1995, and June 1996, (see Appendix B) a soil excavation program was planned which targeted three primary areas of the site (see Figure 2). The former vehicle maintenance area (mill ramp area), the former debarker area, and the former fuel tank area.

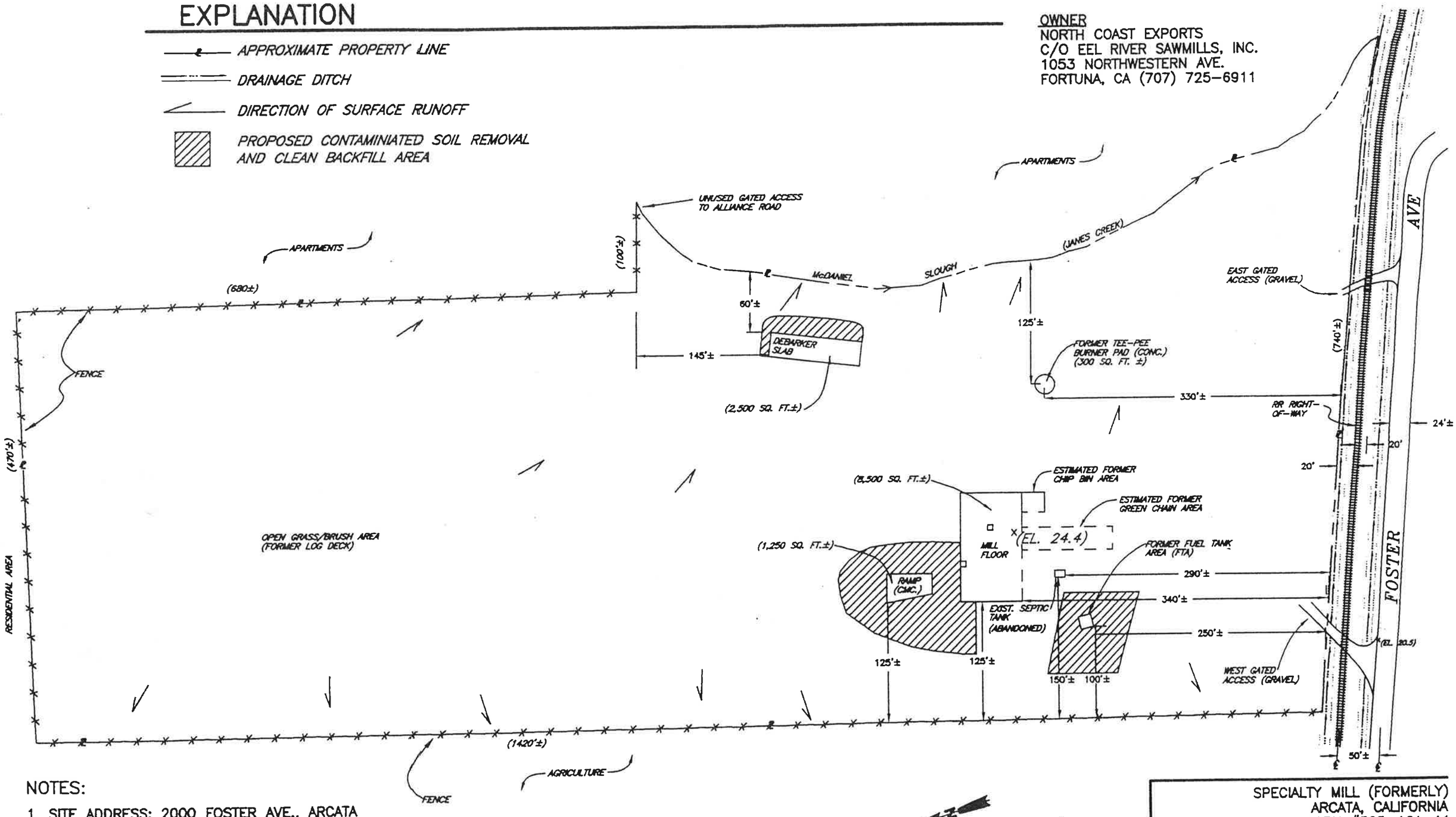
Between July 7th and July 17th, 1997, SHN personnel supervised the excavation and sampling of the three primary areas at the ERS Foster Avenue site. Excavated soil was transported for remediation to the ERS Mill "A" stockpile/remediation area in Fortuna, California. Clean backfill material was brought on site to be used to backfill each excavation to ground level. A site safety tailgate meeting was conducted on site by SHN personnel each day prior to starting the fieldwork. Dale Dell'Osso, representing the HCDEH visited the site on July 8th and 10th, 1997, for a walk through of site excavation operations. Mr. Brian Cox, representing the HCDEH visited the site on July 11th, 1997, to review site excavation, and laboratory analytical procedures. Figures 3, 4, and 5 show July 1997 soil excavation areas.

Soil samples for laboratory analysis were collected from the sidewalls, and floor of each excavation. Soil samples were collected along each sidewall at approximate 30 foot intervals. One soil sample was collected from each excavation base for each approximate 300 square feet

EXPLANATION

- APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- DIRECTION OF SURFACE RUNOFF
- PROPOSED CONTAMINIATED SOIL REMOVAL AND CLEAN BACKFILL AREA

OWNER
NORTH COAST EXPORTS
C/O EEL RIVER SAWMILLS, INC.
1053 NORTHWESTERN AVE.
FORTUNA, CA (707) 725-6911



NOTES:

1. SITE ADDRESS: 2000 FOSTER AVE., ARCATA
2. NO NEW STRUCTURES PLANNED
3. ONLY FORMER STRUCTURE CONCRETE SLABS REMAIN (SITES FACILITIES ABANDONED)
4. NO KNOWN SURVEY MONUMENTS
5. BACKFILL MATERIAL TO BE APPROVED BY ENGINEER – 85% RELATIVE COMPACTION
6. BACKFILL GRADING TO MATCH EXISTING

N

0 100 200 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

PLOT PLAN

SHN 930121.100
SEPTEMBER 1997
FIGURE 2

of base area. Soil samples collected from the former debarker and mill ramp areas were analyzed for total petroleum hydrocarbons as diesel (TPHD), and total petroleum hydrocarbons as motor oil (TPHMO). Soil samples collected from the former fuel tank area were analyzed for total petroleum hydrocarbons as gasoline (TPHG), and benzene, toluene, ethylbenzene and total xylenes (BTEX). Additionally, selected soil samples collected from the former debarker, and mill ramp areas were analyzed for the metals cadmium, chromium, nickel lead and zinc. Selected soil samples collected from the former fuel tank area were analyzed for lead. Samples were submitted under chain-of-custody to an on-site mobile laboratory operated by EXCELCHEM Environmental Laboratories (EEL) of Roseville, California, and to North Coast Laboratories, Ltd. (NCL) of Arcata, California.

Soil analytical results are summarized in Tables 1 through 3, with soil analytical laboratory reports and chain-of-custody documentation presented in Appendix C.

Upon completion of soil excavation activities in each area, the excavations were backfilled with clean backfill material imported from ERS Mill "A" (slide debris), and brought up to the original grade.

SOIL EXCAVATION RESULTS AND DISCUSSION

As part of the assessment of soil samples analyzed for petroleum hydrocarbon constituents, petroleum hydrocarbon concentration guidelines were established which were used to determine whether or not the extent of petroleum hydrocarbon contamination had been reached. TPHG concentrations up to 1 ug/g, TPHD concentrations ranging from 10 ug/g to 20 ug/g, and TPHMO concentrations ranging from 50 to 100 ug/g were considered acceptable to be left in place. Please note that these were general guidelines. Each area that had residual petroleum hydrocarbons were individually assessed. Presented below is a discussion of soil excavation results for each of the three primary excavation areas.

Former Vehicle Maintenance Area

A site map showing the extent of soil excavation and soil sampling locations in the former vehicle maintenance area (mill ramp area) is shown in Figure 3. Excavation of approximately 520 ± cubic yards of soil in this area was conducted in stages, with periodic soil sampling to assess the extent of petroleum hydrocarbon-impacted soil still in place in this area. Sample analytical results are presented in Table 1.

APPENDIX N

TABLE 1. EEL RIVER SAWMILLS - SPECIALTY MILL SOIL REMEDIATION JULY 1997
VEHICLE MAINTENANCE AREA SAMPLE RESULTS

Sample Location Units:	TPHd Diesel ug/g	TPHo Motor Oil ug/g	Cadmium (Cd) mg/kg	Chromium (Cr) mg/kg	Lead (Pb) mg/kg	Nickel (Ni) mg/kg	Zinc (Zn) mg/kg
R-1	<1	<10	--	--	--	--	--
R-2	<1	<10	--	--	--	--	--
R-3	<50	1260	--	--	--	--	--
R-4	<1	<10	--	--	--	--	--
R-5	<1	<10	--	--	--	--	--
R-6	<1	<10	--	--	--	--	--
R-7	<1	<10	--	--	--	--	--
R-8	<1	<10	--	--	--	--	--
R-9	<1	<10	--	--	--	--	--
R-10	<1	<10	--	--	--	--	--
R-11	<1	<10	--	--	--	--	--
R-12	<1	<10	--	--	--	--	--
R-13 (R-3)[2]	<1	59	--	--	--	--	--
R-14	<10	568	--	--	--	--	--
R-15	<5.0	202	--	--	--	--	--
R-16[3]	<10[1]	487	--	--	--	--	--
R-17	<5.0	149	--	--	--	--	--
R-18	<1	<10	--	--	--	--	--
R-19 (Composite)	<1	41	--	--	--	--	--
R-20	<5.0	85	--	--	--	--	--
R-21	<10	168	--	--	--	--	--
R-22	<10	169	--	--	--	--	--
R-23	<1	23	--	--	--	--	--
R-24	<5.0	57	--	--	--	--	--
R-25 (R-14)	<5.0	100	--	--	--	--	--
R-26 (R-15)	<1.0	<10	--	--	--	--	--
R-27 (R-16)	<1.0	<10	--	--	--	--	--
R-28 (R-17)	<1.0	11	--	--	--	--	--
R-29 (R-18)	<5.0[1]	135	--	--	--	--	--
R-30 (R-20)	<1.0	<10	--	--	--	--	--
R-31 (R-21)	<1.0	19	--	--	--	--	--
R-32 (R-22)	<1.0	58	--	--	--	--	--
R-33 (R-23)	1.1	28	--	--	--	--	--
R-34 (R-24)	<1.0	25	--	--	--	--	--
R-35	<1.0	<10	--	--	--	--	--
R-36	<1.0	<10	--	--	--	--	--
R-37	<1.0	12	--	--	--	--	--
R-38	<1.0	<10	--	--	--	--	--
R-EF	--	--	<0.3	30.5	7.2	50.7	62.5
R-ES	--	--	<0.3	25.2	21.2	44	57.3
E-WF	--	--	<0.3	49.9	9.1	87	87.2
R-WS	--	--	<0.3	15.4	5.4	22.7	37.0
R-NF	--	--	<0.3	27.7	7.0	49	56.6
R-NS	--	--	<0.3	35.7	3.5	55.1	57.9
R-SS	--	--	<0.3	62.4	8.1	85.5	87.7
R-SF	--	--	<0.3	59.2	8.0	92.8	90.6

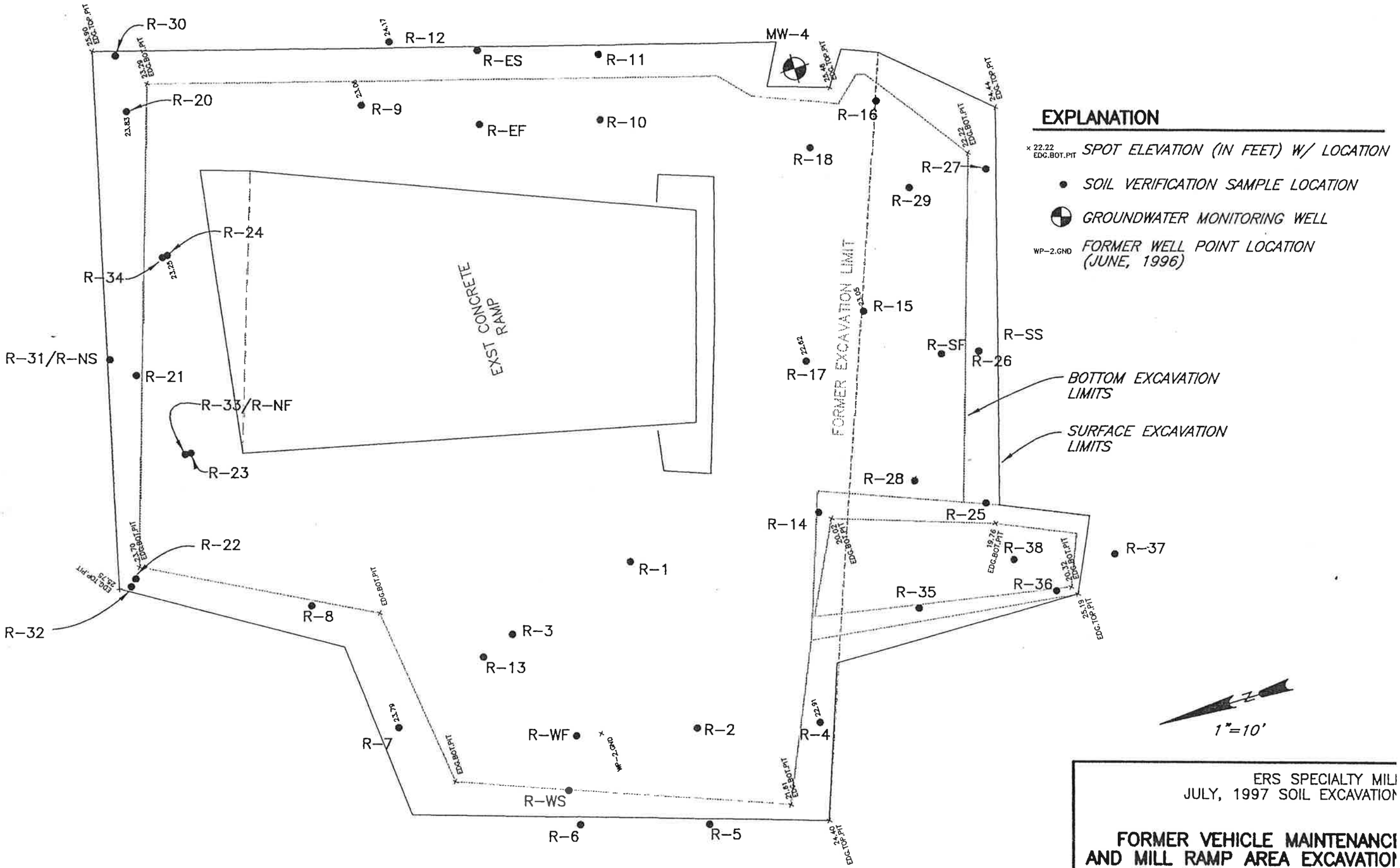
-- Not Tested

Note: ug/g=mg/kg=PPM=Parts per million

[1] Diesel may be masked by longer chained hydrocarbons.

[2] Sample number in parentheses indicate original sample location, prior to additional excavation.

[3] Sample R-16 was also analyzed for Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX), all the results were below the Maximum Reporting Limit (MRL) of 0.005 ug/g.



930121F4

ERS SPECIALTY MILL
JULY, 1997 SOIL EXCAVATION

FORMER VEHICLE MAINTENANCE AND MILL RAMP AREA EXCAVATION

SHN 093121.20
SEPTEMBER, 199
FIGURE

Stage 1 excavation was conducted on the east and west sides of the concrete ramp in the mill ramp area. Soil samples R-1 through R-12 were collected and submitted to the mobile laboratory for chemical analysis. Analytical results indicated the presence of TPHMO in soil sample R-3 (1,260 micrograms per gram (ug/g)), collected from the base of the excavation on the west side of the concrete ramp at a depth of approximately 3 feet below ground surface (BGS). Subsequently, the excavation was deepened to approximately 5 feet BGS on the west side of the concrete ramp and re-sampled. Soil sample R-13 was collected in the same area as soil sample R-3, however at a deeper depth. Analytical results of soil sample R-13 indicated that low level TPHMO (59 ug/g) were still present in the base of the excavation in this area. Petroleum hydrocarbons were not detected in any soil samples collected on the east side of the ramp area.

Stage 2 excavation was conducted along the north and south sides of the concrete ramp. Soil samples R-14 through R-24 were collected and submitted to the mobile laboratory for chemical analysis. Analytical results of soil samples R-14 through R-24 indicated the presence of TPHMO to the north and south of the concrete ramp. The excavation was extended on the north and south sides of the concrete ramp. Soil samples R-25 through R-34 were then collected and submitted to the mobile laboratory for chemical analysis. Analytical results of soil samples R-25 through R-34 indicated TPHMO concentrations of 100 ug/g, and 135 ug/g in soil samples R-25 and R-29, respectively.

Once the limits of the mill ramp area excavation had been reached, soil samples were collected from various locations for metals analysis. Soil samples R-WS, R-WF, R-ES, R-EF, R-NS, R-NF, R-SF and R-SS were collected at the locations shown on Figure 3. Analytical results indicated that the metals present in soils in the mill ramp area are representative of background levels for soils naturally found in the Arcata Bottoms area. There is no indication that metals found in the soil samples collected from this area are a result of mill operation activities.

Based on the results of the soil samples collected from all stages of the excavation, it was determined that the source area contaminated soil in the mill ramp area had been removed, and that excavation in this area could be stopped.

Former Debarker Area

A site map showing the extent of soil excavation and soil sampling locations in the former debarker area is shown in Figure 4. Excavation of approximately 420 cubic yards of soil in this area was conducted in stages, with periodic soil sampling to assess the extent of petroleum hydrocarbon-impacted soil still in place in this area. Sample analytical results are presented in Table 2.

TABLE 2.

EEL RIVER SAWMILLS - SPECIALTY MILL SOIL REMEDIATION JULY 1997
DEBARKER AREA SAMPLE RESULTS

Sample Location / Units:	TPHd Diesel ug/g	TPHo Motor Oil ug/g	TPHg Gasoline ug/g	Benzene ug/g	Toluene ug/g	Ethyl-benzene ug/g	Total Xylenes ug/g	Cadmium (Cd) mg/kg	Chromium (Cr) mg/kg	Lead (Pb) mg/kg	Nickel (Ni) mg/kg	Zinc (Zn) mg/kg	EPA 8240 ug/g
D-1	<10	708	--	--	--	--	--	--	--	--	--	--	--
D-2	<1.0	<10	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-3	<1.0	<10	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-4	<10	217	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-5	<1.0	<10	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-6	<1.0	<10	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-7	<10	1890	<5.0	<0.025	<0.025	<0.025	<0.025	--	--	--	--	--	--
D-8	<1.0	101	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-9	<1.0[1]	33	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-10	<10	26	--	--	--	--	--	--	--	--	--	--	--
D-11	<10	10	--	--	--	--	--	--	--	--	--	--	--
D-12	<10	23	--	--	--	--	--	--	--	--	--	--	--
D-13 @ 5'	--	--	--	--	--	--	--	--	--	--	--	--	<0.005
D-13	<1.1	29	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-14	<461	32,900	<1.0[2]	<0.005[2]	<0.005[2]	<0.005[2]	<0.005[2]	--	--	--	--	--	--
D-15	<1.2	<11	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-16	<1.2	<12	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-17	<1.2	<12	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--
D-18	<1.1	30	--	--	--	--	--	--	--	--	--	--	--
B-SES	--	--	--	--	--	--	--	<0.3	52	6.6	112	69	--
B-SWS	--	--	--	--	--	--	--	<0.3	45	4.3	97	62	--
B-SF	--	--	--	--	--	--	--	<0.3	52.9	7.2	119	73	--
B-ES @ 4'	--	--	--	--	--	--	--	<0.3	69.4	9.3	173	79.1	--
B-ES @ 7'	--	--	--	--	--	--	--	<0.3	68.2	10.5	124	95.5	--
B-WS @ 10'	--	--	--	--	--	--	--	<0.3	53.2	5.9	103	72.4	--
B-NS @ 4'	--	--	--	--	--	--	--	<0.3	72.7	8.4	136	89.8	--
B-NWF	--	--	--	--	--	--	--	<0.3	67.8	9.3	123	91.7	--
B-EF	--	--	--	--	--	--	--	<0.3	62.4	8.0	119	92.3	--

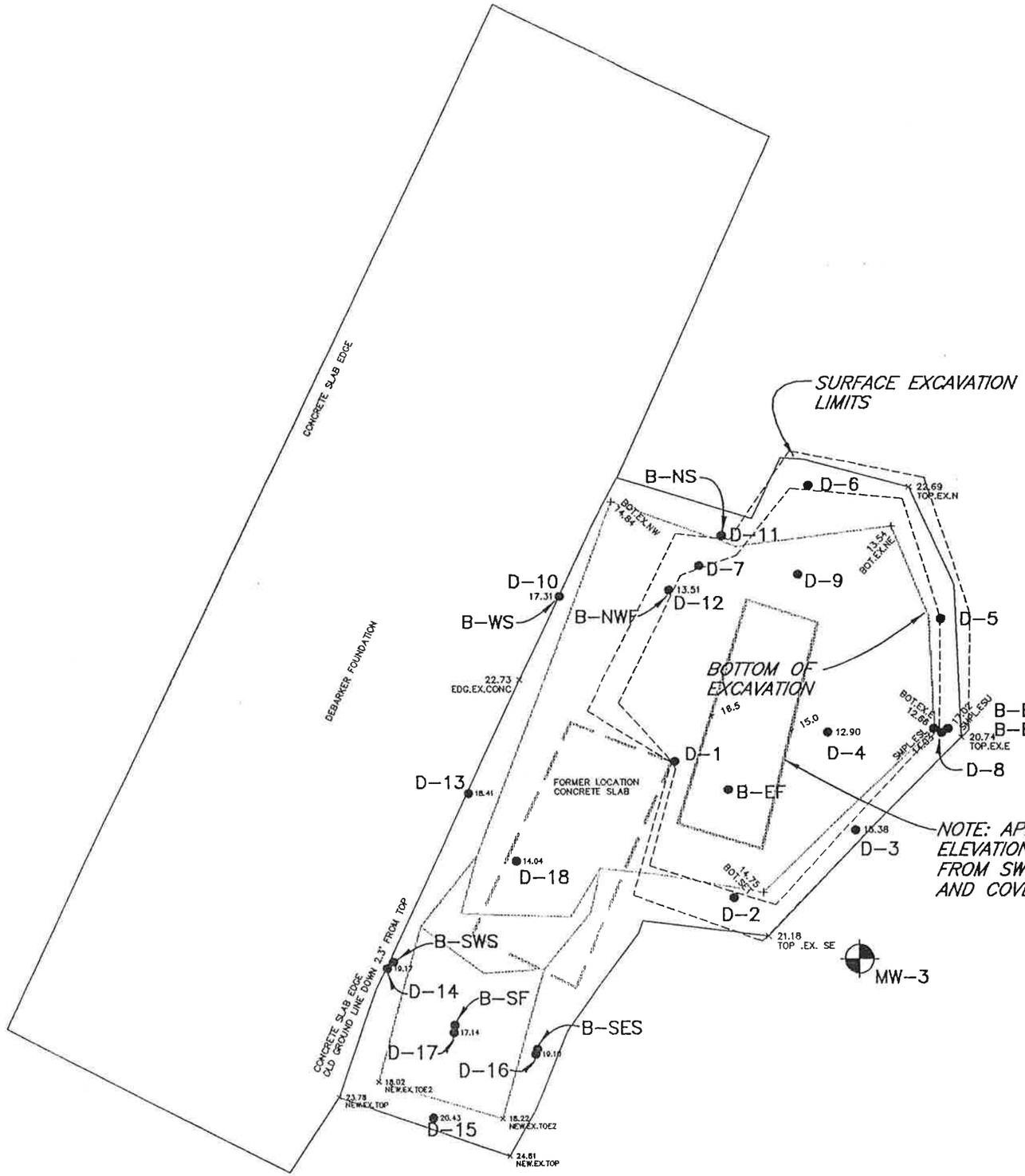
-- Not Tested

Note: ug/g=mg/kg=PPM=Parts per million

[1] Diesel may be masked by longer chained hydrocarbons.

[2] Poor recovery due to matrix interference.

APPENDIX N



EXPLANATION

× 22.69 TOP.EX.N — SPOT ELEVATION (IN FEET) W/ LOCATION

● — SOIL VERIFICATION SAMPLE LOCATION

⊕ — GROUNDWATER MONITORING WELL

ERS SPECIALTY MIL
JULY, 1997 SOIL EXCAVATIO

FORMER DEBARKER ARE EXCAVATIO

SHN 093121.20
SEPTEMBER, 199

FIGURE 4

SHN

930121F4

All excavation in the former debarker area was conducted to the east of the concrete slab that is present in this area. However, care was taken to ensure that the excavation did not affect McDaniel Slough (Janes Creek), and the City of Arcata's Janes Creek restoration project.

The stage 1 excavation in this area extended approximately 35 feet to the east of the concrete slab and was approximately 45 feet wide in a north/south direction with a maximum depth of approximately 11 feet BGS. Soil samples D-1 through D-9 were collected and submitted to the mobile laboratory for chemical analysis. Analytical results of soil samples D-1 through D-9 indicated the presence of TPHMO primarily along the west sidewall of the excavation, and beneath an additional concrete slab which was uncovered during excavation. Analytical results of soil samples D-1 (beneath additional concrete slab) and D-7 (west sidewall) had TPHMO concentrations of 708 ug/g and 1,890 ug/g, respectively. Analytical results of soil samples D-2, D-3, D-5 and D-8, collected along the east sidewall of the excavation indicated the presence of TPHMO at concentrations ranging from below the limit of detection to 101 ug/g. Analytical results of soil samples D-4 and D-9, collected from the base of the excavation had TPHMO concentrations of 217 ug/g and 33 ug/g, respectively.

Stage 2 excavation in the former debarker area targeted the TPHMO contaminated soil along the west sidewall in the area represented by soil sample D-7. Following excavation in this area, soil samples D-10, D-11 and D-12 were collected and submitted to the mobile laboratory for chemical analysis. Analytical results of soil samples D-10 through D-12 indicated the presence of TPHMO at concentrations ranging from 10 ug/g, to 26 ug/g.

Stage 3 excavation targeted TPHMO contaminated soil in the area represented by soil sample D-1, including soil underneath the additional concrete slab uncovered during excavation. Prior to the conduct of any excavation underneath the additional concrete slab, permission was obtained from the City of Arcata and the HCDEH to move the additional concrete slab and place it at the base of the excavation. Once the additional concrete slab was moved, excavation continued in a southerly direction. Soil samples D-13 through D-18 were collected and submitted to the mobile laboratory for chemical analysis. Analytical results of soil samples D-13 through D-18 indicated the presence of high concentrations of TPHMO below the existing debarker foundation concrete slab (soil sample D-14, 32,900 ug/g).

A "worst case" sample (D-13@5') was collected and analyzed for EPA Method 8240 (purgeable organic) constituents. All constituents were found to be below method reporting limits. This information reflects previous SHN sampling investigative work analytical results.

Once the limits of the debarker area excavation had been reached, soil samples were collected from various locations for metals analysis. Soil samples B-SES, B-SWS, B-SF, B-ES@4, B-ES@7, B-WS@10, B-NS@4, B-NWF and B-EF were collected at the locations shown on Figure 4. Analytical results indicated that the metals present in soils in the debarker area are representative of background levels for soils naturally found in the Arcata Bottoms area. There is no indication that metals found in the soil samples collected from this area are a result of mill operation activities.

Analytical results of soil samples collected from the excavation sidewalls and base in the debarker area indicate that all accessible source area contaminated soil has been removed. TPHMO impacted soil still exists beneath the existing concrete foundation slab. This soil is in-accessible as long as the existing foundation remains in place.

Prior to conduct of backfilling activities in this area, the new location of the additional concrete slab was recorded, as is shown on Figure 4.

Former Fuel Tank Area

A site map showing the extent of soil excavation and soil sampling locations in the former fuel tank area is shown in Figure 5. Excavation of approximately 1,060 cubic yards of soil in this area was conducted in stages, with periodic soil sampling to assess the extent of petroleum hydrocarbon-impacted soil still in place in this area. Sample analytical results are presented in Table 3.

Stage 1 soil excavation was conducted in the immediate vicinity of the former fuel tank area concrete slab. The concrete slab was removed, and the area around it subsequently excavated. Care was taken during this stage to insure that additional abandoned underground storage tanks were not present in the area. Soil samples F-1 through F-17 were collected and submitted to the mobile laboratory for chemical analysis. Each soil sample was analyzed for TPHG, and BTEX. Analytical results indicated the presence of TPHG and various components of BTEX in soil samples collected along the west and south walls of the excavation (samples F-1, F-2, F-8, F-13 and F-17). Based on these results, additional soil excavation was conducted.

Stage 2 soil excavation targeted petroleum hydrocarbon-impacted soil along the west and south sidewalls. Soil samples F-18 through F-28 were collected and submitted to the mobile laboratory for chemical analysis. Analytical results of these soil samples indicated the presence of TPHG impacted soil along the west sidewall at a depth of approximately 4 feet BGS. Observations in the field indicated the presence of an approximate 1 to 2 foot thick petroleum hydrocarbon-impacted soil lens present approximately 4 feet BGS along the west sidewall.

Stage 3 soil excavation continued to target petroleum hydrocarbon-impacted soil along the west and south sidewalls. Soil samples F-29 through F-37 were collected and submitted to the mobile laboratory for chemical analysis. Analytical results indicated that petroleum hydrocarbons detected in the west sidewall had been removed. However, an area near the southeast corner (sample location F-33) still contained soil impacted with TPHG. A visual inspection of this area revealed that a very thin sandy silt layer was present which contained TPHG. An additional soil sample (sample F-34) was collected just below this thin layer. Analytical results indicated that TPHG had not migrated vertically to the soils below. Based on the TPHG concentration in sample F-33, the thickness of the sandy silt layer, the lack of petroleum hydrocarbons in soil

APPENDIX N

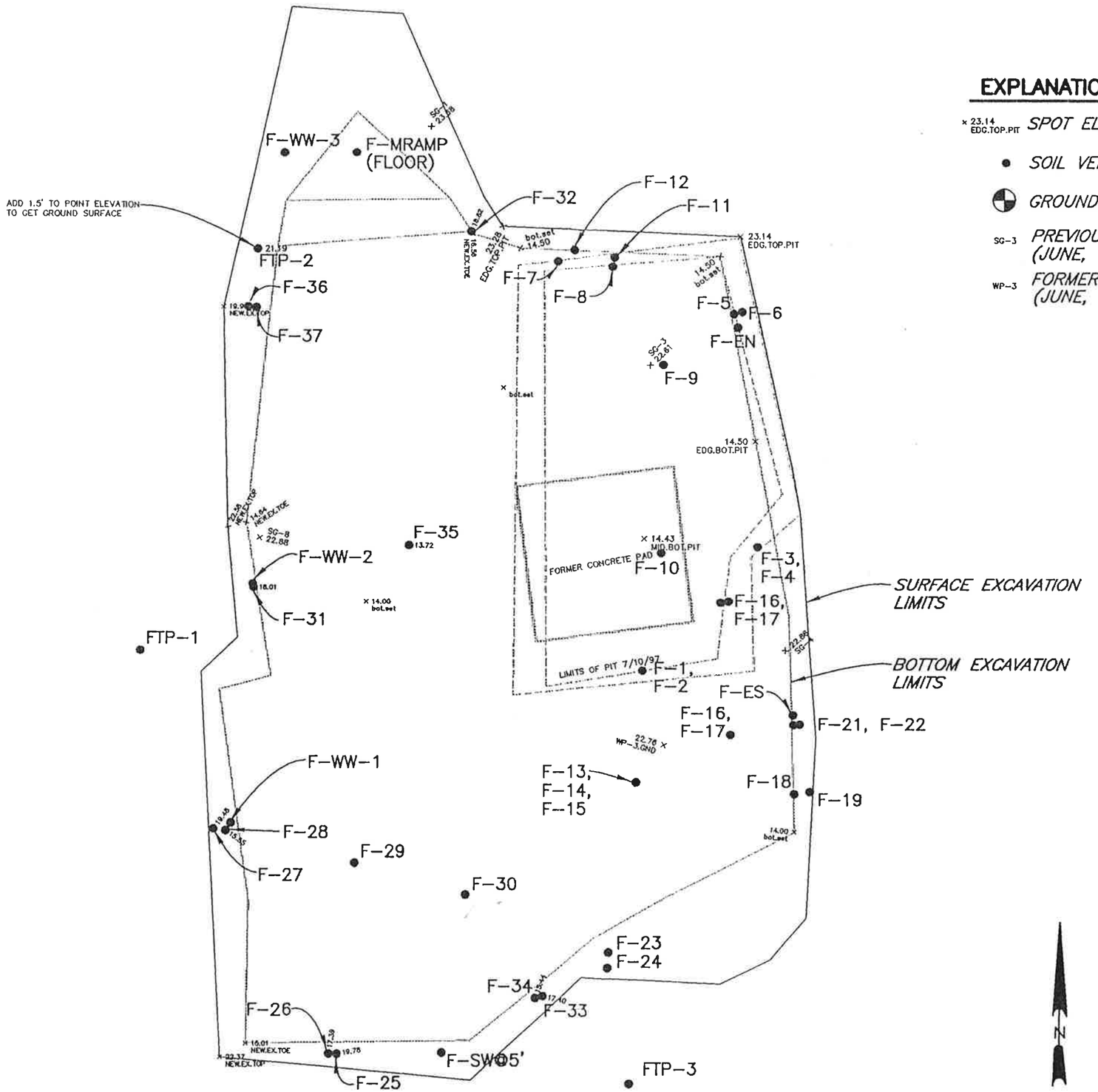
TABLE 3. EEL RIVER SAWMILLS - SPECIALTY MILL SOIL REMEDIATION JULY 1997
FUEL TANK AREA SAMPLE RESULTS

Sample Location and Depth Units:	TPHg Gasoline ug/g	Benzene ug/g	Toluene ug/g	Ethyl-benzene ug/g	Total Xylenes ug/g	Lead (Pb) mg/kg
F-1	49.4	<0.050	<0.050	0.063	0.15	--
F-2	40.5	<0.025	<0.025	0.023	0.120	--
F-3	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-4	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-5	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-6	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-7	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-8	3.7	<0.005	<0.005	<0.005	0.009	--
F-9	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-10	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-11	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-12	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-13	226	<0.100	<0.100	<0.100	0.38	--
F-14	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-15	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-16	22	<0.025	<0.025	<0.025	0.050	--
F-17	<1.0	<0.005	<0.005	<0.005	0.005	--
F-18 @ 4'	7.8[1]	<0.005	<0.005	<0.005	0.006	--
F-19 @ 8'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-20 @ floor	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-21 @ 4.5'	4.4	<0.005	<0.005	<0.005	<0.005	--
F-22 @ 7'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-23 @ 4'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-24 @ 6'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-25 @ 3'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-26 @ 5.5'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-27 @ 3'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-28 @ 6.5'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-29 @ floor	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-30 @ 5'	447	<0.050	<0.050	0.050	0.279	--
F-31 @ 4'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-32 @ 4.5'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-33 @ 4.5'	86	<0.050	<0.050	<0.050	<0.050	--
F-34 @ 6'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-35 @ floor	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-36 @ 3'	<1.0	<0.005	<0.005	<0.005	<0.005	--
F-37 @ 6'	<1.0	<0.005	<0.005	<0.005	<0.005	--
FTP-1 @ 4'	<1.0	<0.005	<0.005	<0.005	<0.005	--
FTP-1 @ 5.5'	<1.0	<0.005	<0.005	<0.005	<0.005	--
FTP-2 @ 3.5'	<1.0	<0.005	<0.005	<0.005	<0.005	--
FTP-2 @ 6'	<1.0	<0.005	<0.005	<0.005	<0.005	--
FTP-3 @ 4'	<1.0	<0.005	<0.005	<0.005	<0.005	--
FTP-3 @ 6.5'	3.2[1]	<0.005	<0.005	<0.005	<0.005	--
F-NE @ 4'	--	--	--	--	--	4.4
F-EN @ 4'	--	--	--	--	--	3.2
F-ES @ 4.5'	--	--	--	--	--	4.7
F-SW @ 5'	--	--	--	--	--	6.1
F-WW1 @ 4'	--	--	--	--	--	6.2
F-WW2 @ 4'	--	--	--	--	--	5.9
F-WW3 @ 3'	--	--	--	--	--	8.4
F-NRAMP(floor) @ 3'	--	--	--	--	--	6.3

-- Not Tested

Note: ug/g=mg/kg=PPM=Parts per million

[1] Laboratory estimated value.



EXPLANATION

× 23.14 EDG.TOP.PIT — SPOT ELEVATION (IN FEET) W/ LOCATION

● — SOIL VERIFICATION SAMPLE LOCATION

⊕ — GROUNDWATER MONITORING WELL

SG-3 — PREVIOUS SOIL GAS SURVEY LOCATION (JUNE, 1996)

WP-3 — FORMER WELL POINT LOCATION (JUNE, 1996)

ERS SPECIALTY MILI
JULY, 1997 SOIL EXCAVATION

FORMER FUEL TANK AREA EXCAVATION

SHN 093121.20(
SEPTEMBER, 199
FIGURE 5

930121F4

below the layer and the uncertainty as to the horizontal extent of the sandy silt layer, it was determined that this thin layer of petroleum hydrocarbon-impacted soil was not a threat to the environment or human health and could be left in place.

Once the limits of the former fuel tank area excavation had been reached, soil samples were collected from various locations for metals analysis. Soil samples F-NE@4, F-EN@4, F-ES@4.5, F-SW@5, F-WW1@4, F-WW2@4, F-WW3@3 AND F-NRAMP@3 were collected at the locations shown on Figure 5. Analytical results indicated that the lead present in soils in the former fuel tank area are representative of background levels for soils naturally found in the Arcata Bottoms area. There is no indication that lead found in the soil samples collected from this area are a result of mill operation activities.

Based on the results of the soil samples collected from all stages of the excavation, it was determined that the source area contaminated soil in the former fuel tank area had been removed, and that excavation in this area could be stopped.

NON-SOIL DEBRIS

During excavation activities at various locations at the site, concrete and metal debris was encountered. The metal debris was loaded onto trucks and transported to Hansen Metals in Fortuna, California. Concrete debris was transported to ERS Mill "A" to be used on site.

DUST CONTROL

Airborne dust was minimized during excavation activities by continued watering of access roads and excavation areas. Windy days created times of faster drying of watered areas and necessitated more frequent site dust control effort. Local residents to the south of the site were informed of work schedules and the type of activity to minimize health concerns for any potential dust exposure.

SITE SECURITY

Throughout the soil excavation program, steel, lockable, security fencing was used to secure the excavated areas during non-working hours. In addition, the steel gates in place at the two Foster Avenue driveways entering the site were kept locked during non-working hours.

TEMPORARY STOCKPILED SOIL

A portion of the soil excavated from the mill ramp area, being contaminated with low mobility, high carbon range, petroleum hydrocarbons, was left stockpiled on site. Remediation cell volume at the Mill "A" location was depleted with the transport of the gasoline and diesel contaminated soils. Approximately 350 cubic yards of soil await transport to a winterization stockpile area, at Mill "A", that has been conditionally approved by the HCDEH and the RWQCB. Stockpiled soil will be removed to Mill "A" by the end of September or early October. Upon removal of and winterization of the stockpiled soil, SHN will follow this report with an addendum letter that will document the disposition of the soil.

CONCLUSIONS AND RECOMMENDATIONS

Soil excavation activities resulted in the removal of approximately 2,000 cubic yards (total, bank measure) of petroleum hydrocarbon-impacted soil from the three primary site areas. Analytical results of the excavation sidewall and floor samples from each area indicate that all of the source area contaminated soil has been removed to SHN assumed acceptable regulatory contaminant concentration levels, with the exception of the debarker area. In the debarker area, petroleum hydrocarbon-impacted soil present beneath the existing concrete slab was left in place because it was not accessible. The concrete slab that caps this soil is up to 4 feet thick, and creates a substantial impermeable barrier for surface water infiltrating to this clayey silt soil.

Based on the information collected during this program, and previous site investigations, SHN recommends that no further soil excavation or soil investigation action be taken at the site. In the event that the existing concrete slab present in the debarker area is removed from the site, then the petroleum hydrocarbon-impacted soil present beneath the concrete slab can be removed.

Monitoring wells will continue to be sampled on a quarterly basis, and water levels are measured in the wells on a monthly basis, in conformance with the HCDEH monitoring and reporting program. Monitoring will conducted for a period of one year (to August 1998), at which time the monitoring data will be evaluated, with recommendations for future site activities.

APPENDIX N

REFERENCES

California Regional Water Quality Control Board. (August 1990). Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks. Santa Rosa: RWQCB.

---. (February 24, 1992). "Appendix A," Regional Board Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks. Santa Rosa: RWQCB.

SHN Consulting Engineers & Geologists, Inc. (June 1993). Phase I Environmental Site Assessment, 2000 Foster Avenue, Arcata, California, AP #505-161-11. (Prepared for North Coast Export Company. Eureka: SHN.

---. (January 1995). Initial Report of Findings for 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11 Formerly Specialty Mill. Eureka: SHN.

---. (May 1995). Work Plan for Hydrogeologic Investigations and Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Humboldt County AP# 505-161-11, Arcata, CA. Eureka: SHN.

---. (August 1995). Initial Groundwater Investigation Report of Findings For 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11. Eureka: SHN.

---. (March 1996). Work Plan for Continued Subsurface Investigation and Initial Remedial Action at the Former Specialty Mill Site, 2000 Foster Avenue, Arcata, CA, Humboldt County AP# 505-161-11. Eureka: SHN.

---. (August 1996). Initial Groundwater Investigation Report of Findings For 2000 Foster Avenue, Arcata, California, Humboldt County AP# 505-161-11. Eureka: SHN

APPENDIX N

FILE COPY

CONSULTING ENGINEERS
& GEOLOGISTS

Reference: 930121.200

June 12, 1997

Mr. Dale Dell'Osso, Project Geologist
Hazardous Materials Unit
Humboldt County Division of Environmental Health
100 H Street, Suite 100
Eureka, CA 95501

SUBJECT: NORTH COAST EXPORTS (former SPECIALTY MILL)
2000 FOSTER AVENUE, ARCATA, CALIFORNIA
LOP # 12518 SOIL REMEDIAL ACTION CLARIFICATION NO. 2

Dear Mr. Dell'Osso:

SHN Consulting Engineers and Geologists, Inc. (SHN) on behalf of Eel River Sawmills Inc. (ERS), is submitting this letter in response to your April 8, 1997 letter to ERS requesting further information and clarification to SHN's soil Remedial Action Plan (RAP) (July 1996), amendment (September 4, 1996), and clarification (February 10, 1997) relative to the subject project.

As I have previously discussed with you, the excavation of soil from the Specialty Mill site has been tentatively scheduled to commence the week of June 23- 27, 1997, weather permitting.

This letter will address, and augment previous phone conversations we have had, and the issues identified in your recent correspondence, and pertinent to the overexcavation and initial offsite stockpiling of the contaminated soil ,as requiring clarification:

1. Cleanup of "elevated" metals concentrations in the soil is anticipated to be accomplished during soil overexcavation, and will be documented during specific area verification sampling. Sample analyses will include the metals Cd, Cr, Ni, Pb, and Zn.

2. Dust control at both sites will be conducted with fog misting or water spray from a water truck or hose as site facilities/conditions allow. The misting will immobilize both dust and most fugitive heavier petroleum hydrocarbon emissions from the excavation, if necessary, and soil tilling operations.

3. The petroleum hydrocarbon contaminated soil will be periodically tilled to aerate and mix the soil, as mill operations allow, and treatment effectiveness soil sampling is proposed to be conducted once annually, prior to remediation cell winterization. Nutrient concentrations and needs, as well as bacterial population counts will not be characterized or calculated. Nutrients and bacteria will be available to the soil through the addition of cow manure or wood sawdust. Bulking agents or other additives to the stockpiles will be documented as to character and quantity added. Soil analyses will include, pH, moisture content, total petroleum hydrocarbons as gasoline, diesel, and motor oil. Due to

CONSULTING ENGINEERS
& GEOLOGISTS

historically documented soil sample analytical results, indicating non detectable levels of benzene, toluene, ethylbenzene, and total xylenes (BTEX), those constituents will only be analyzed initially, and if found to be non detectable at method reporting limits they will be dropped from the analytical suite. A rough mass balance calculation could be performed at the time of confirmation of process sampling to address HCDEH concerns, if any, of the "dilution factor". The remediation process will be modified, with discussion between involved parties, if future remediation confirmation sampling indicates unacceptably high levels of the constituents of concern for the intended remediated soil use.

4. Specialty Mill site soils not excavated during the proposed overexcavation will be considered as potentially requiring future attention prior to site redevelopment. Mandated disclosure statements to potential new owners will assure that the existing "unknown condition" of the soil relative to soil contamination will not be discounted. Monitoring of soils excavated during such development activities, or involving landscaping of the areas adjacent to residential construction may be required if soil staining, odor, or free product is evidenced. This type of monitoring has been successfully conducted for several developments in this area and the applicable building permits have addressed this type of site constraint.

I trust that this letter clarifies the intent and position of ERS and SHN in complying with regulatory wishes and requirements for soil remedial action and protection of the waters of the State at the Specialty Mill and Mill A sites.

Please call me at 441-8855, or Dennis Scott (ERS) at 725-6911 to discuss any of the foregoing items.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS

Martin E. Lay, PE
Project Manager
MEL:ls
cc Dennis Scott, ERS
Rick Steed, ERS
Bonnie Rolandelli, NCRWQCB
Rick Azevedo, NCRWQCB
Steve Tyler, City of Arcata

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
100 H STREET, SUITE 100, EUREKA, CA 95501
(707) 445-6215
FAX (707) 441-5699

8 April, 1997

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, CA 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

We have received and reviewed the report of findings and the amended soil remedial action plan prepared by SHN Consulting Engineers and Geologists (SHN). We have the following comments that need to be adequately addressed prior to implementation of the proposed remedial activity.

- SHN states that the areas of elevated heavy metals are associated with those areas of elevated hydrocarbon concentrations. The remedial action plan needs to include confirmation sampling for chromium, nickel, and zinc in those areas with elevated concentrations.

- While SHN has addressed some of the issues regarding the proposed bioremediation, there area some items which remain to be addressed as outlined in our 8 October 1996 letter. SHN states that it is not the intent of ERS to make this project a test or study case. Neither is this the intent of the HCDEH. The information requested regarding the proposed bioremediation and remedial progress reports is required to evaluate treatment effectiveness. This needs to be addressed in the final remedial action plan and be included in remedial progress reports as requested.

- Some areas proposed for overexcsavation contain TPH as gasoline. Additionally, TPH as diesel contains volatile components. SHN proposes air monitoring during overexcavation. If volatile constituents are not detected during the overexcavation phase, then it will not be necessary to perform air monitoring at the bioremediation area. However, dust control during tilling of stockpiles does need to be addressed in the remedial action plan.

- We are concerned that excavation for buried utilities, deep foundations, and removal of rocky fill for landscaping purposes may bring contaminated soil to the surface where it may propose a potential human and environmental health risk as stated before. We do not concur with SHN's statement that the remaining contamination should be considered "low risk". This has not been adequately demonstrated at this time. We agree that these issues need further discussion. This needs to be addressed in the final remedial action plan.

A final remedial action plan for bioremediation of the soil will need to be submitted for review once the initial remedial action is approved and completed. Please submit the requested information by 9 June 1997. I look forward to working with you in this matter. Please call me at 707.441.5690, if you have any questions or if you would like to schedule a meeting.

Sincerely,

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

dd/tb

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Marty Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata

12518.004/697L

APPENDIX N

STATE OF CALIFORNIA - CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION
5550 SKYLANE BLVD. SUITE A
SANTA ROSA, CA 95403
PHONE: (707) 576-2220

October 11, 1996

Mr. Dennis Scott
Eel River Sawmills
1053 Northwestern Avenue
Fortuna, CA 95540

Subject: Bioremediation of Soil, Eel River Sawmill-Specialty Mill, Humboldt County

Dear Mr. Scott:

Eel River Sawmills is proposing to treat petroleum contaminated soils at Mill "A" in Fortuna. Soils from the Eel River Sawmills-Specialty Mill site will be excavated and hauled to Mill "A" for treatment.

Your consultants, SHN Engineers and Geologists (SHN), have submitted a complete Report of Waste Discharge (ROWD). SHN has proposed that the bioremediation activities be conducted under Order No. 92-66, General Waste Discharge Requirements for Soil Bioremediation. During recent discussions with Marti Lay of SHN we discussed a slight modification to the ROWD. Rather than narrow windrows, larger soil piles would be constructed. We concur with this approach in that it may reduce the potential for tracking petroleum-containing soil out of the containment area.

The proposed surface water sampling frequency should be clarified. The proposed sampling frequency is adequate for winter periods when no activities occur. A clause should be added to the sampling plan requiring that samples be taken the first rainstorm after winterization, or when any wintertime activities occur.

The proposed surface water sampling frequency should be clarified. The proposed sampling frequency is adequate for winter periods when no activities occur. A clause should be added to the sampling plan requiring that samples be taken the first rainstorm after winterization, or when any wintertime activities occur.

On August 12, 1996 Regional Water Board staff published a notice of its intent to regulate the proposed activities under Order No. 92-66. The public comment period has closed without receipt of substantial comments that would affect the proposed project.

Therefore, Order No. 92-66 for bioremediation of soil generated at the Eel River Sawmills Specialty Mill is enclosed and is effective immediately. The permit will expire in two years on October 1, 1998.

If you have any questions, please contact Richard Azevedo of my staff at (707) 576-2679.

Sincerely,

Craig R. Johnson
Acting Executive Officer

RGA:tab/ers-rga.oc2

Enclosure

cc: Marti Lay, SHN Engineers and Geologists, 812 W. Wabash, Eureka, CA 95501
Dale Del'Osso, Humboldt County Environmental Health Department

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl-benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-FTA1	2.0	02/17/94	500 (a)	--	19 (e)	--	<0.03	<0.03	<0.03	<0.03	--	--	--	--	--	12
TP-FTA1	5.0	02/17/94	250 (a)	--	220 (e)	--	<0.5 (g)	<0.5 (g)	<0.5 (g)	<0.5 (g)	--	--	--	--	--	8.3
TP-ST	2.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	82	98	61	8.4
TP-ST	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	99 (i)	110	62	9.1
TP-VM4	2.0	02/17/94	--	140 (h)	--	82	--	--	--	--	--	<1.0	25	29	38	20
TP-VM4	4.0	02/17/94	--	<10	--	50	--	--	--	--	--	<1.0	76	88	74	9.7
TP-DBW	2.0	02/17/94	--	130 (h)	--	82	--	--	--	--	--	<1.0	25	28	30	4.8
TP-DBW	5.0	02/17/94	--	<10	--	<50	--	--	--	--	--	<1.0	80	87	58	6.4
TP-DBE	2.0	02/17/94	--	--	--	58	--	--	--	--	--	<1.0	22	45	270	51
TP-DA1	2.0	02/17/94	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
TP-DA2	2.0	02/17/94	--	--	--	95	--	--	--	--	--	--	--	--	--	--
TP-1	1.5	05/17/94	19 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	50 (f)
TP-1 (DUPE)	1.5	05/17/94	--	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	29 (f)
TP-1	4.0	05/17/94	16 (a)	--	3.6 (e)	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	7.6
TP-2	1.0	05/17/94	1.9 (d)	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	14
TP-2	4.0	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.0
TP-3	1.0	05/17/94	160 (d)	--	19	--	<0.005	<0.005	<0.10 (g)	<0.10 (g)	--	--	--	--	--	5.3
TP-3	3.2	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	10
TP-3	4.5	05/17/94	<1.0	--	<1.0	--	<0.005	<0.005	<0.005	<0.010	--	--	--	--	--	8.1
TP-4	2.0	05/17/94	8.5 (d)	200	--	--	--	--	--	--	--	--	--	--	--	--
TP-4	4.5	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	1.3	05/17/94	41 (d)	510	--	--	--	--	--	--	--	--	--	--	--	--
TP-5	4.4	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-6	1.7	05/17/94	24 (d)	150	--	--	--	--	--	--	--	--	--	--	--	--
TP-6 (DUPE)	1.7	05/17/94	5.6	48	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX N

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	*8010/ 8020	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
TP-6	4.3	05/17/94	49 (d)	820	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	1.2	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-7	4.9	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	2.7	05/17/94	280 (d)	3400	--	--	--	--	--	--	--	--	--	--	--	--
TP-8	4.5	05/17/94	270 (d)	1700	<1.0	--	<0.050	<0.050	<0.050	<0.025	<0.050	--	--	--	--	--
TP-9	1.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	10
TP-9	4.8	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	6.4
TP-10	1.1	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-10	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-11	4.4	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	1.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-12	4.3	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-13	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	2.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-14	4.0	05/17/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	1.4	05/18/94	<5.0	210	--	--	--	--	--	--	--	--	--	--	--	--
TP-15	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	1.7	05/18/94	17 (d)	160	--	--	--	--	--	--	--	--	--	--	--	--
TP-16	4.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	1.1	05/18/94	3.0 (d)	35	--	--	--	--	--	--	--	--	--	--	--	--
TP-17 (DUPE)	1.1	05/18/94	3.2 (d)	28	--	--	--	--	--	--	--	--	--	--	--	--
TP-17	3.6	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	1.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
TP-18	4.5	05/18/94	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX N

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	TPHIR	Benzene	Toluene	Ethyl Benzene	Xylenes	**8270	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(ft)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
MW-1	1 - 1.5	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	1.5 - 2	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	0.5 - 1	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	51	62	60	11
MW-1	9.5 - 10	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-1	9 - 9.5	06/21/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8.5 - 9	06/21/95	--	--	--	--	--	--	--	--	--	<1.0	72	83	77	10
MW-2	3.5 - 4	06/21/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-2	3 - 3.5	06/21/95	13 (b)	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	2.5 - 3	06/21/95	--	--	--	--	--	--	--	--	--	--	--	--	--	18
MW-3	1.5 - 2	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	1 - 1.5	06/22/95	<1.0	24	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	0.5 - 1	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	27	30	65	22
MW-3	7 - 7.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	6.5 - 7	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6 - 6.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	79	110	65	9.5
MW-3	7.5 - 7.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--
MW-3	8 - 8.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-3	17 - 17.5	06/22/95	--	--	<1.0	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-3	16.5 - 17	06/22/95	<1.0	<10	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	16 - 16.5	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	88	110	71	11
MW-4	4.5 - 5	06/22/95	--	--	1.2 (j)	--	<0.0050	<0.0050	<0.0050	<0.01	--	--	--	--	--	--
MW-4	4 - 4.5	06/22/95	38 (a)	26	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5 - 5.5	06/22/95	--	--	--	--	--	--	--	--	<1600**	--	--	--	--	--
MW-4	3.5 - 4	06/22/95	--	--	--	--	--	--	--	--	--	<1.0	74	90	74	10
MW-4	5.5 - 5.75	06/22/95	--	--	--	3600	--	--	--	--	--	--	--	--	--	--
VM-1	1.5	06/22/95	--	--	--	82	--	--	--	--	--	--	--	--	--	--
DB-1	1.75	06/22/95	--	--	--	<50	--	--	--	--	--	--	--	--	--	--

APPENDIX N

SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, THROUGH FEBRUARY 1996, CONTINUED

Sample ID	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	**8270/ 8080	Benzene	Toluene	Ethyl Benzene	Xylenes	*601/ 602	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)	Tannin & Lignin
Groundwater Samples		(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
BH-1	05/18/94	67 (b)	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.043	--
BH-2	05/18/94	<50	<500	--	--	--	--	--	--	--	<0.010	0.047	0.077	0.031	<0.020	--
BH-3	05/18/94	480 (c)	1800	<50	--	<1.0	<1.0	<1.0	<0.50	<1.0	<0.010	0.023	0.034	<0.020	<0.020	--
BH-4	05/18/94	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	06/28/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.022	0.052	0.03	<0.020	0.43
MW-1 (k)	02/23/96	<50	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	0.049	<0.020	0.88
MW-2	06/29/94	74 (b)	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	0.036	1.1
MW-2 (k)	02/23/96	180	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	<0.020	<0.020	1.1
MW-2 (QC-2)	02/23/96	--	--	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--
MW-3	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	<0.0050	<0.020	<0.020	<0.020	2.3
MW-3 (k)	02/23/96	<50	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	0.031	<0.020	4.5
MW-3 (QC-1)	02/23/96	<50	<500	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.062	0.11	0.061	<0.020	1.7
MW-4 (QC-1)	06/29/94	<50	<500	<50	<50 **	<0.50	<0.50	<0.50	<0.50	--	<0.010	0.066	0.11	0.057	<0.020	1.8
MW-4 (k)	12/20/95	--	--	--	--	--	--	--	--	--	<0.010	<0.0050	<0.020	0.020	<0.020	--
MW-4 (k)	02/23/96	<50	<500	<50	--	<0.50	<0.50	<0.50	<0.50	--	--	<0.0050	<0.020	0.17	<0.020	2.1

APPENDIX N

-- = Not tested

TPHIR = Total Petroleum Hydrocarbons, analyzed using infrared spectrophotometry

** For a full list of EPA 8010, 8020, 601 and 602 constituents, and detection limits see North Coast Laboratories results.*

*** For a full list of EPA 8270 and 8080 constituents, and detection limits see American Environmental Network Laboratories results.*

DUPE/ QC = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesl. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample does not have the typical pattern of fresh gasoline. The peaks elute towards the end of the gasoline range. In the labs judgement the material appears to be a product heavier than gasoline. Due to the differences in the purging efficiency of these heavier materials the result may be variable. The result reported represents the amount of material in the gasoline range only.

(f) Due to the high level of lead present, this sample and its duplicate sample were analyzed by EPA 6010. The difference in the lead results may be due to sample non-homogeneity.

(g) The detection limits were raised due to matrix interference.

(h) Sample contains large individual peaks in the motor oil range, in addition to the motor oil present. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

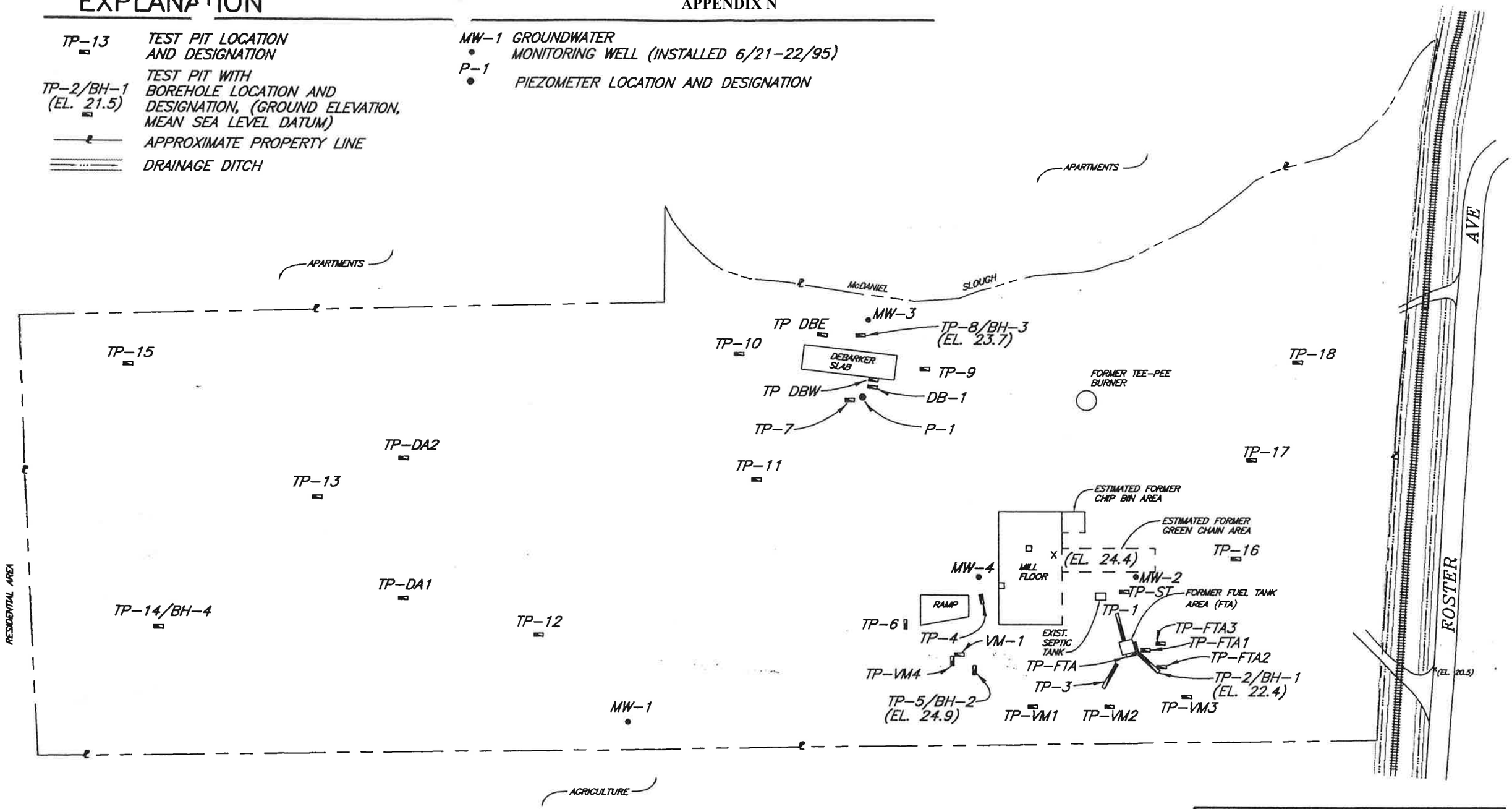
(i) The sample from TP-ST at 5.0' was also tested for Soluble Chromium, the result was 0.56 mg/L. The Soluble Threshold Limit Concentration (STLC) for Chromium = 5.0 mg/L.

(j) Sample does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.

(k) Metal concentration represents dissolved metals fraction.

EXPLANATION

- TP–13 — TEST PIT LOCATION AND DESIGNATION
- TP–2/BH–1 (EL. 21.5) — TEST PIT WITH BOREHOLE LOCATION AND DESIGNATION, (GROUND ELEVATION, MEAN SEA LEVEL DATUM)
- APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- MW–1 — GROUNDWATER MONITORING WELL (INSTALLED 6/21–22/95)
- P–1 — PIEZOMETER LOCATION AND DESIGNATION



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505–161–11

SITE PLAN (PREVIOUS WORK)

SHN 930121.100
JULY, 1996

FIGURE 2

SHN

930121.02

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, JUNE 1996 SAMPLING

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Cadmium[(l)] (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(Inches)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
S-101	6 - 8	6/26/96	2.5 (d)	190	--	--	--	--	--	--	--	--	--	--
S-101	36	6/26/96	<1.0	15 (f)	--	--	--	--	--	--	--	--	--	--
S-102	12	6/25/96	12 (C)	150 (f)	--	--	--	--	--	--	--	--	--	--
S-102	52	6/25/96	<1.0	20 (f)	--	--	--	--	--	--	--	--	--	--
S-103	4 - 8	6/25/96	1.8 (d)	83 (f)	--	--	--	--	--	--	--	--	--	--
S-103 (k)	42 - 46	6/25/96	--	--	--	--	--	--	--	<2.0	72	88	73	9.6
S-103	43	6/25/96	950 (a)	<500 (g)	--	--	--	--	--	--	--	--	--	--
S-103 (QA-1)	43	6/25/96	150 (a)	37 (f)	--	--	--	--	--	--	--	--	--	--
S-104	6 - 8	6/25/96	<2.0 (e)	47 (f)	--	--	--	--	--	--	--	--	--	--
S-104	42	6/25/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-105	6 - 8	6/26/96	1.4 (d)	29 (f)	--	--	--	--	--	<2.0	38	47	59	14
S-105	36	6/26/96	<1.0	<10	--	--	--	--	--	<2.0	64	87	54	5.7
S-106	6	6/26/96	<1.0	30 (f)	--	--	--	--	--	<2.0	43	47	66	25
S-106	48	6/26/96	<1.0	<10	--	--	--	--	--	<2.0	85	110	80	9.1
S-106 (QC-2)	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-107	6	6/26/96	1.2 (d)	83 (f)	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<2.0	47	56	160	29 (j)
S-108	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-108	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-109	6	6/26/96	4.8 (d)	180	--	--	--	--	--	--	--	--	--	--
S-109 (k)	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-110	6	6/26/96	<1.0	58	--	--	--	--	--	--	--	--	--	--
S-110	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--

APPENDIX N

TABLE 1. SUMMARY OF SOIL AND GROUNDWATER ANALYTICAL RESULTS, JUNE 1996 SAMPLING (CONTINUED)

Sample ID	Depth	Date	TPH Diesel	TPH Motor Oil	TPH Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	Cadmium[(i)] (Cd)	Chromium (Cr)	Nickel (Ni)	Zinc (Zn)	Lead (Pb)
Soil Samples	(Inches)		(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/g)	(ug/Kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
S-111	6	6/26/96	1.5 (b)	15 (f)	--	--	--	--	--	--	--	--	--	--
S-111	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-112	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-112	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-113	6	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
S-113	48	6/26/96	<1.0	<10	--	--	--	--	--	--	--	--	--	--
SD-1		6/26/96	4.3 (d)	190 (f)	--	--	--	--	--	--	--	--	--	--
SD-2		6/26/96	<1.0	15 (f)	--	--	--	--	--	--	--	--	--	--
Groundwater Samples			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
WP-1		6/26/96	<200 (e)	3800	<50	--	--	--	--	<0.020	<0.0050	0.020	0.090	<0.020
WP-2		6/25/96	<50	<500	<50	<0.50	0.74	<0.50	<0.50	<0.020	<0.0050	0.027	0.12	<0.020
WP-3		6/25/96	1300 (a)	<500	62 (h)	<0.50	1.7	<0.50	<0.50	<0.020	<0.0050	<0.020	0.30	<0.020

-- = Not tested

QA/QC = Duplicate sample for laboratory quality control

(a) Sample contains material similar to degraded or weathered diesel oil. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(b) Sample contains material in the diesel range of molecular weights, but the material does not exhibit the peak pattern typical of diesel oil.. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(c) Sample contains material in the diesel range of molecular weights and beyond. It also exhibits the peaks typical of diesel. This indicates the presence of diesel plus an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(d) Sample contains material in the diesel range of molecular weights and beyond. This suggests the presence of an oil heavier than diesel. All diesel results reported represent the amount of material in the diesel range of molecular weights only.

(e) Sample was diluted due to the amount of material in the motor oil range.

(f) Sample does not have the typical pattern of fresh motor oil. All motor oil results represent the amount of material in the motor oil range of molecular weights only.

(g) Sample was diluted due to the large amount of material in the diesel range.

(h) Sample does not have the typical pattern of fresh gasoline. However, the result reported represents the amount of material in the gasoline range.

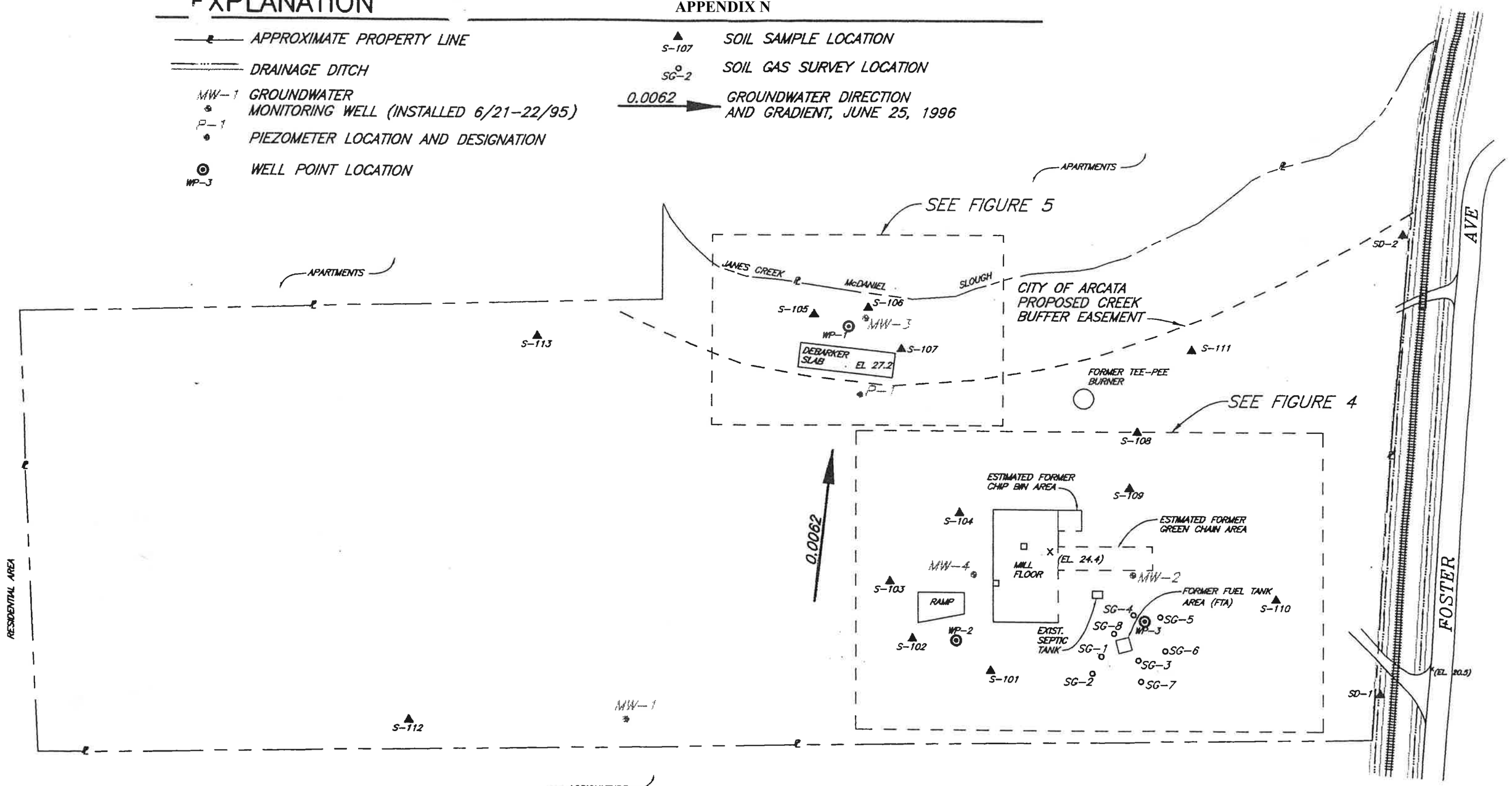
(i) The reporting limit for cadmium was raised due to matrix interference.

(j) The sample from S-107 at 6' was also tested for Soluble Lead, the result was less then the reporting limit of 0.45 mg/L. The Soluble Threshold Limit Concentration (STLC) for Lead = 5.0 mg/L.

(k) EPA method 8270, semivolatile organics, run on sample. All consitiuents below laboratory detection limit.

EXPLANATION

- APPROXIMATE PROPERTY LINE
- DRAINAGE DITCH
- MW-1 GROUNDWATER MONITORING WELL (INSTALLED 6/21-22/95)
- P-1 PIEZOMETER LOCATION AND DESIGNATION
- WP-3 WELL POINT LOCATION
- S-107 SOIL SAMPLE LOCATION
- SG-2 SOIL GAS SURVEY LOCATION
- 0.0062 GROUNDWATER DIRECTION AND GRADIENT, JUNE 25, 1996



0 50 100 Feet

SCALE: 1" = 100'

ALL LOCATIONS ARE APPROXIMATE

SPECIALTY MILL (FORMERLY)
ARCATA, CALIFORNIA
APN #505-161-11

SITE PLAN
SAMPLING LOCATIONS
JUNE 1996

SHN 930121.100
JULY, 1996

FIGURE 3

930121S3

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: MARTIN LAY
Phone #: 707 441-8855
Company/Address: SHN 812 W. WABASH, EUREKA, CA.
FAX #: 441-8877
Project Number: 930121.200
P.O.#: 093121.200
Project Name: ERS/SPECIALTY MILL
Project Location: SPECIALTY MILL VM AREA (RAMP)
Sampler Signature: Martin Lay

ANALYSIS REQUEST — Invoice # 797002 — TAT

Sample ID	Sampling DATE	Sampling TIME	Container VOA	SLEEVE	1L GLASS	1L PLASTIC	Method Preserved HCl	HNO_3	ICE	NONE	Matrix WATER	SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	W.E.T. (✓)	TOTAL (✓)	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)
R-1	7/7/97														X	X				S07970 34																	
R-2															X	X				S07970 35																	
R-3															X	X				S07970 36																	
R-4															X	X				S07970 37																	
R-5															X	X				S07970 38																	
R-6															X	X				S07970 39																	
R-7															X	X				S07970 40																	
R-8															X	X				S07970 41																	
R-9															X	X				S07970 42																	
R-10															X	X				S07970 43																	
R-11															X	X				S07970 44																	

Relinquished by:	Date	Time	Received by:	Remarks:
Martin Lay	7/7/97	1815		
Relinquished by	Date	Time	Received by:	
Relinquished by	Date	Time	Received by Laboratory:	Bill To:
	7/7/97	1815		

APPENDIX N

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Marty Lay
Phone #: (707) 441-8855
Company/Address: SHN 812 W. Wabash, Ave.
FAX #: (707) 441-8877
Project Number: 093121.200
P.O.#:
Project Name: ERS Speciality Mill
Project Location: Arcata, Ca.
Sampler Signature: David R. Raim

ANALYSIS REQUEST IN# 797002

TAT

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	EPA - Priority Pollutant Metals (W.E.T./TOTAL)	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	RUSH SERVICE (12 hr) or (24 hr) Mobile	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)
R-13 (R-3)	7/8/97			X					X			X			X	X				S0797053													X		
R-14				X					X			X			X	X				S0797054													X		
R-15				X					X			X			X	X				S0797055													X		
R-16				X					X			X	X		X	X				S0797056													X		
R-17				X					X			X			X	X				S0797057													X		
R-18				X					X			X			X	X				S0797058													X		
R-19 composite				X					X			X			X	X				S0797059													X		
R-20				X					X			X			X	X				S0797060													X		
R-21				X					X			X			X	X				S0797061													X		
R-22				X					X			X			X	X				S0797062													X		
R-23				X					X			X			X	X				S0797063													X		

Relinquished by:	Date	Time	Received by:
David R. Raim	7/8/97	1310	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	7/8/97	1310	[signature]

Remarks:

Bill To:

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Marty Lay
Phone #: (707) 441-8855
Company/Address: SHN 812 W. Wabash Ave.
FAX #: (707) 441-8877
Project Number: 093121.200
P.O.#:
Project Name: ERS Specialty Mill
Project Location: Arcata, Ca.
Sampler Signature: David R. Laini

ANALYSIS REQUEST

INV# 797002

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO_3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL
R-24	7/8/97											

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T.(r)	TOTAL(r)
		+	+				S	0797		01-4											

TAT

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)

Relinquished by:	Date	Time	Received by:
David R. Laini	7/8/97	1310	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	7/8/97	1315	

Remarks:

Bill To:

APPENDIX N

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: MARTIN LAY
Phone #: (707) 441-8855
Company/Address: SHN 812 W. WABASH EUREKA, CA
FAX #: (707) 441-8877
Project Number: 093121.200
P.O.#: 093121.200
Project Name: ERS/SPECIALTY MILL
Project Location:
Sampler Signature:

IN# 797002

ANALYSIS REQUEST

TAT

Sample ID	Sampling: DATE	Sampling: TIME	Container: VOA	Container: SLEEVE	Container: 1L GLASS	Container: 1L PLASTIC	Method Preserved: HCl	Method Preserved: HNO_3	Method Preserved: ICE	Method Preserved: NONE	Matrix: WATER	Matrix: SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	W.E.T.(Y)	TOTAL(Y)	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)
R-12	7/7/97			Y											X	X				S0797045																	
D-1	7/8/97													■	X	X				S0797065																	
D-2														X	X	X				S0797066																	
D-3														X	X	X				S0797067																	
D-4														X	X	X				S0797068																	
D-5														X	X	X				S0797069																	
D-6														X	X	X				S0797070																	
D-7														X	X	X				S0797071																	
D-8														X	X	X				S0797072																	
D-9	↓			↓										X	X	X				S0797073																	

Relinquished by:	Date	Time	Received by:
Martin Lay	7/7/97	1815	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	7/7/97	1815	

Remarks: Samples D-1 thru D-9 were rec'd on 7-8-97 @ 1730. JD 7-8-97
Per Martin L. no G/B on D-1 JD 7-9-97

Bill To:

APPENDIX N

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Martin E. Lay
Phone #: (707) 441-8855
Company/Address: SHN 812 W. Wabash Eureka, Ca. 95501
FAX #: (707) 441-8855
Project Number: 093121.200
P.O.#:
Project Name: ERS Specialty Mill
Project Location: Arcata, Ca
Sampler Signature: David R. Paini

ANALYSIS REQUEST — IN# 797002 — TAT

Sample ID	Sampling DATE	Sampling TIME	Container VOA	SLEEVE	1L GLASS	1L PLASTIC	Method Preserved HCl	HNO_3	ICE	NONE	Matrix WATER	SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T. (✓)	TOTAL (✓)	RUSH SERVICE (12 hr) or (24 hr) Mobile	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)
R-25 (R-14)	7/9/97								X			X			X	X				S	07971	11													X		
R-26 (R-15)	↓								X			X			X	X				S	07971	12													X		
R-27 (R-16)									X			X			X	X				S	07971	13													X		
R-28 (R-17)									X			X			X	X				S	07971	14													X		
R-29 (R-18)									X			X			X	X				S	07971	15													X		
R-30 (R-20)									X			X			X	X				S	07971	16													X		
R-31 (R-21)									X			X			X	X				S	07971	17													X		
R-32 (R-22)									X			X			X	X				S	07971	18													X		
R-33 (R-23)									X			X			X	X				S	07971	19													X		
R-34 (R-24)	↓								X			X			X	X				S	07971	20													X		

Relinquished by:	Date	Time	Received by:
David R. Paini	7/9/97	1305	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	7/9/97	1305	

Remarks:

Bill To:

APPENDIX N

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

INV# 792002

Project Manager:	Phone #:
Martin E. Lay	(707) 441-8555
Company/Address:	**FAX #:**
SHN 812 W. Wabash Eureka, Ca. 95501	(707) 441-8877
Project Number: / **P.O.#:**	**Project Name:**
093121.200	ERS Specialty Mill
Project Location:	**Sampler Signature:**
Arcata, Ca.	Dan'l R. Lain

Sample ID	Sampling: DATE	Sampling: TIME	Container: VOA	Container: SLEEVE	Container: 1L GLASS	Container: 1L PLASTIC	Method Preserved: HCl	Method Preserved: HNO_3	Method Preserved: ICE	Method Preserved: NONE	Matrix: WATER	Matrix: SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T. (✓)	TOTAL (✓)	TAT: RUSH SERVICE (12 hr) or (24 hr) Mobil	TAT: EXPEDITED SERVICE (48 hr) or (1 wk)	TAT: STANDARD SERVICE (2wk)	
R-35	7/10/97			X					X			X			X	X				S0797138															X		
R-36				X					X			X			X	X				S0797139															X		
R-37				X					X			X			X	X				S0797140															X		
R-38				X					X			X			X	X				S0797141															X		

Relinquished by:	Date	Time	Received by:	Remarks:
Dan'l R. Lain	7/10/97	1202		
Relinquished by	Date	Time	Received by:	
Relinquished by	Date	Time	Received by Laboratory:	Bill To:
	7/10/97	17:32		

APPENDIX N

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

INV# 797002

LABORATORY NUMBER:

Attention: Marty Lax
Results & Invoice to: SHN
Address: 812 W. Wabash
Eureka, Ca.
Phone: 441-8855
Copies of Report to:

TAT: [X] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [X] Other: Mobile
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:__/__/__
Final Report: FAX [ ] Verbal [ ] By:__/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX
797142	F-1	7/10/97		Soil			X
797143	F-2						X
797144	F-3						X
797145	F-4						X
797146	F-5						X
797147	F-6						X
797148	F-7						X
797149	F-8						X
797150	F-9						X
797151	F-10						X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

APPENDIX N

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	1638 7/10/97		7/10/97 1629

SAMPLE DISPOSAL
[X] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

INV# 797002

LABORATORY NUMBER:

Attention: Marbin E. Lay
Results & Invoice to: SHN
Address: 812 W. Wabash Ave.
Eureka, Ca 95501
Phone: 441-8855
Copies of Report to:

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [X] Other: Mobile
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:__/__/__
Final Report: FAX [ ] Verbal [ ] By:__/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS Speciality Mill
Purchase Order Number:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

APPENDIX N

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHD/mo	ANALYSIS: Gas/BTEX
797 1166	D-10	7/4/97		Soil		13	X	
797 1167	D-11						X	
797 1168	D-12						X	
797 1169	F-11							X
797 1170	F-12							X
797 1171	F-13							X
797 1172	F-14							X
797 1173	F-15							X
797 1174	F-16							X
797 1175	F-17							X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
David R. Paine David R. Paine	0840 7/11/97		7/11/97

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

INV# 797002

LABORATORY NUMBER:

Attention: Marty Kay
Results & Invoice to: SHN Consulting
Address: 812 w Wabash Ave
Eureka CA 95501
Phone: (707) 441-8855
Copies of Report to:

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [X] Other: Immediate
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:__/__/__
Final Report: FAX [ ] Verbal [ ] By:__/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX
197198	FTP-1@5½'	7-12-97	0800	S		3	X
197199	FTP-1@4'		0755				X
197200	FTP-2@3½'		0810				X
197201	FTP-2@6'		0815				X
197202	FTP-3@4'		0825				X
197203	FTP-3@6½'		0830				X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Coburn Curtis Coburn	7/12/97 0833		7/12/97 0932

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

INV# 797002

LABORATORY NUMBER:

Attention: Marty Kay
Results & Invoice to: SHN Consulting Engrs
Address: PO Box 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to:

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [X] Other: Mobile
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:__/__/
Final Report: FAX [ ] Verbal [ ] By:__/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS Specialty
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX		
797204	E-18 @ 4'	7-12-97	1143	S		13	X		
797205	E-19 @ 8'	"	1145	"			X		
797206	E-20 @ Floor	"	1312	"			X		

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

APPENDIX N

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Cobvin Curtis Cobvin	7-12-97 1155		7-12-97

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

JUL 28 1997

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-07-97
	SHN Consulting Engineers	Date Received:	07-07-97
	812 W. Wabash Ave	TPHd Analyzed:	07-07,08-97
	Eureka, CA 95501	TPHo Analyzed:	07-07,08-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	1.0	10
SAMPLE Laboratory Identification:		
R-1 S0797034	ND	ND
R-2 S0797035	ND	ND
R-4 S0797037	ND	ND
R-5 S0797038	ND	ND
R-6 S0797039	ND	ND
R-7 S0797040	ND	ND

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd–Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo–Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

Laboratory Representative

07-08-97
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-07-97
	SHN Consulting Engineers	Date Received:	07-07-97
	812 W. Wabash Ave	TPHd Analyzed:	07-07-97
	Eureka, CA 95501	TPHo Analyzed:	07-07-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	50	500
SAMPLE Laboratory Identification:		
R-3 S0797036	ND	1260

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

Laboratory Representative

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Date Reported

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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: TPHd Analyzed: TPHo Analyzed:	07-07-97 07-07-97 07-08-97 07-08-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	1.0	10
SAMPLE Laboratory Identification:		
R-8 S0797041	ND	ND
R-9 S0797042	ND	ND
R-10 S0797043	ND	ND
R-11 S0797044	ND	ND
R-12 S07970045	ND	ND

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-08-97
	SHN Consulting Engineers	Date Received:	07-08-97
	812 W. Wabash Ave	TPHd Analyzed:	07-09-97
	Eureka, CA 95501	TPHo Analyzed:	07-09-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	1.0	10
SAMPLE Laboratory Identification:		
R-13 (R-3) S0797053	ND	59
R-18 S0797058	ND	ND
R-19 Composite S0797059	ND	41
R-23 S0797063	ND	23

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-08-97
	SHN Consulting Engineers	Date Received:	07-08-97
	812 W. Wabash Ave	TPHd Analyzed:	07-08,09-97
	Eureka, CA 95501	TPHo Analyzed:	07-08,09-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	5.0	50
SAMPLE Laboratory Identification:		
R-15 S0797055	ND	202
R-17 S0797057	ND	149
R-20 S0797060	ND	85
R-24 S0797064	ND	57

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-08-97
	SHN Consulting Engineers	Date Received:	07-08-97
	812 W. Wabash Ave	TPHd Analyzed:	07-08,09-97
	Eureka, CA 95501	TPHo Analyzed:	07-08,09-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	10	100
SAMPLE Laboratory Identification:		
R-14 S0797054	ND	568
R-21 S0797061	ND	168
R-22 S0797062	ND	169

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-08-97
	SHN Consulting Engineers	Date Received:	07-08-97
	812 W. Wabash Ave	BTEX Analyzed:	07-08-97
	Eureka, CA 95501	TPHd Analyzed:	07-08-97
		TPHo Analyzed:	07-08-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHd PPM	TPHo PPM
Reporting Limit:	0.005	0.005	0.005	0.005	10	100
SAMPLE Laboratory Identification:						
R-16 S0797056	ND	ND	ND	ND	ND*	487

ppm= Parts per million = mg/Kg= milligrams per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
* = Diesel may be masked by longer chained hydrocarbons.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 followed by modified EPA 8015 with direct sample injection into a GC equipped with an FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-08-97
	SHN Consulting Engineers	Date Received:	07-08-97
	812 W. Wabash Ave	TPHd Analyzed:	07-09-97
	Eureka, CA 95501	TPHo Analyzed:	07-09-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	10	100
SAMPLE Laboratory Identification:		
D-1 S0797065	ND	708

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Project : 930121.200/ERS/Specialty Mill

Date Sampled: 07-08-97
Date Received: 07-08-97
BTEX Analyzed: 07-09-97
TPHg Analyzed: 07-09-97
TPHd Analyzed: 07-09-97
TPHo Analyzed: 07-09-97
Matrix: Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM	TPHd PPM	TPHo PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0	1.0	10
SAMPLE Laboratory Identification:							
D-2 S0797066	ND	ND	ND	ND	ND	ND	ND
D-3 S0797067	ND	ND	ND	ND	ND	ND	ND
D-5 S0797069	ND	ND	ND	ND	ND	ND	ND
D-6 S0797070	ND	ND	ND	ND	ND	ND	ND
D-8 S0797072	ND	ND	ND	ND	ND	ND	101
D-9 S0797073	ND	ND	ND	ND	ND	ND*	33

ppm= Parts per million = mg/Kg= milligrams per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
* = TPHd may be masked by longer chained hydrocarbons.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low to medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015 which utilizes a GC equipped with a FID.
TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 followed by modified EPA 8015 with direct sample injection into a GC equipped with an FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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Attention:	Mr. Martin Lay	Date Sampled:	07-08-97
	SHN Consulting Engineers	Date Received:	07-08-97
	812 W. Wabash Ave	BTEX Analyzed:	07-09-97
	Eureka, CA 95501	TPHg Analyzed:	07-09-97
		TPHd Analyzed:	07-09-97
		TPHo Analyzed:	07-09-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM	TPHd PPM	TPHo PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0	10	100
SAMPLE Laboratory Identification:							
D-4 S0797068	ND	ND	ND	ND	ND	ND	217

ppm= Parts per million = mg/Kg= milligrams per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low to medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015 which utilizes a GC equipped with a FID.
TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 followed by modified EPA 8015 with direct sample injection into a GC equipped with an FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-08-97
	SHN Consulting Engineers	Date Received:	07-08-97
	812 W. Wabash Ave	BTEX Analyzed:	07-09-97
	Eureka, CA 95501	TPHg Analyzed:	07-09-97
		TPHd Analyzed:	07-09-97
		TPHo Analyzed:	07-09-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM	TPHd PPM	TPHo PPM
Reporting Limit:	0.025	0.025	0.025	0.025	5.0	10	100
SAMPLE Laboratory Identification:							
D-7 S0797071	ND	ND	ND	ND	ND	ND	1890

ppm= Parts per million = mg/Kg= milligrams per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low to medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015 which utilizes a GC equipped with a FID.
TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 followed by modified EPA 8015 with direct sample injection into a GC equipped with an FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-09-97
	SHN Consulting Engineers	Date Received:	07-09-97
	812 W. Wabash Ave	TPHd Analyzed:	07-09-97
	Eureka, CA 95501	TPHo Analyzed:	07-09-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	5.0	50
SAMPLE Laboratory Identification:		
R-25 (R-14) S0797111	ND	100
R-29 (R-18) S0797115	ND*	135

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
* = TPHd may be masked by longer chained hydrocarbons.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

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	SHN Consulting Engineers	Date Received:	07-09-97
	812 W. Wabash Ave	TPHd Analyzed:	07-09,10-97
	Eureka, CA 95501	TPHo Analyzed:	07-09,10-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	1.0	10
SAMPLE Laboratory Identification:		
R-26 (R-15) S0797112	ND	ND
R-27 (R-16) S0797113	ND	ND
R-28 (R-17) S0797114	ND	11
R-30 (R-20) S0797116	ND	ND
R-31 (R-21) S0797117	ND	19
R-32 (R-22) S0797118	ND	58

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-09,10-97
	SHN Consulting Engineers	Date Received:	07-09,10-97
	812 W. Wabash Ave	TPHd Analyzed:	07-10-97
	Eureka, CA 95501	TPHo Analyzed:	07-10-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	1.0	10
SAMPLE Laboratory Identification:		
R-33 (R-23) S0797119	1.1	28
R-34 (R-24) S0797120	ND	25
R-35 S0797138	ND	ND
R-36 S0797139	ND	ND
R-37 S0797140	ND	12
R-38 S0797141	ND	ND

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

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07-10-97
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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-10-97
	SHN Consulting Engineers	Date Received:	07-10-97
	812 W. Wabash Ave	BTEX Analyzed:	07-10-97
	Eureka, CA 95501	TPHg Analyzed:	07-10-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.050	0.050	0.050	0.050	10
SAMPLE Laboratory Identification:					
F-1 S0797142	ND	ND	0.063	0.15	49.4

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

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ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-10,11-97
	SHN Consulting Engineers	Date Received:	07-10,11-97
	812 W. Wabash Ave	BTEX Analyzed:	07-11-97
	Eureka, CA 95501	TPHg Analyzed:	07-11-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.025	0.025	0.025	0.025	5.0
SAMPLE Laboratory Identification:					
F-2 S0797143	ND	ND	0.023	0.120	40.5
F-16 S0797174	ND	ND	ND	0.050	22

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

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ANALYSIS REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Sampled: 07-10-97
Date Received: 07-10-97
BTEX Analyzed: 07-10,11-97
TPHg Analyzed: 07-10,11-97

Project : 930121.200/ERS/Specialty Mill

Matrix: Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
F-3 S0797144	ND	ND	ND	ND	ND
F-4 S0797145	ND	ND	ND	ND	ND
F-5 S0797146	ND	ND	ND	ND	ND
F-6 S0797147	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

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Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-10-97
	SHN Consulting Engineers	Date Received:	07-10-97
	812 W. Wabash Ave	BTEX Analyzed:	07-11-97
	Eureka, CA 95501	TPHg Analyzed:	07-11-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
F-7 S0797148	ND	ND	ND	ND	ND
F-8 S0797149	ND	ND	ND	0.009	3.7
F-9 S0797150	ND	ND	ND	ND	ND
F-10 S0797151	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-11-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-11-97
	SHN Consulting Engineers	Date Received:	07-11-97
	812 W. Wabash Ave	BTEX Analyzed:	07-11-97
	Eureka, CA 95501	TPHg Analyzed:	07-11-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
F-11 S0797169	ND	ND	ND	ND	ND
F-12 S0797170	ND	ND	ND	ND	ND
F-14 S0797172	ND	ND	ND	ND	ND
F-15 S0797173	ND	ND	ND	ND	ND
F-17 S0797175	ND	ND	ND	0.005	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-11-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-11-97
	SHN Consulting Engineers	Date Received:	07-11-97
	812 W. Wabash Ave	BTEX Analyzed:	07-11-97
	Eureka, CA 95501	TPHg Analyzed:	07-11-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.100	0.100	0.100	0.100	20
SAMPLE Laboratory Identification:					
F-13 S0797171	ND	ND	ND	0.38	226

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg–Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-11-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: TPHd Analyzed: TPHo Analyzed:	07-11-97 07-11-97 07-11-97 07-11-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	TPHd PPM	TPHo PPM
Reporting Limit:	10	1.0
SAMPLE Laboratory Identification:		
D-10 S0797166	ND	26
D-11 S0797167	ND	10
D-12 S0797168	ND	23

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

Laboratory Representative

07-11-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-12-97
	SHN Consulting Engineers	Date Received:	07-12-97
	812 W. Wabash Ave	BTEX Analyzed:	07-12-97
	Eureka, CA 95501	TPHg Analyzed:	07-12-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
FTP-1 @ 4 S0797199	ND	ND	ND	ND	ND
FTP-1 @ 5 1/2 S0797198	ND	ND	ND	ND	ND
FTP-2 @ 3 1/2 S0797200	ND	ND	ND	ND	ND
FTP-2 @ 6 S0797201	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-12-97
Date Reported

APPENDIX N

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ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-12-97
	SHN Consulting Engineers	Date Received:	07-12-97
	812 W. Wabash Ave	BTEX Analyzed:	07-12-97
	Eureka, CA 95501	TPHg Analyzed:	07-12-97
Project :	930121.200/ERS/Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
FTP-3 @ 4 S0797202	ND	ND	ND	ND	ND
FTP-3 @ 6 1/2 S0797203	ND	ND	ND	ND	3.2*
F-18 @ 4' S0797204	ND	ND	ND	0.006	7.8*
F-19 @ 8' S0797205	ND	ND	ND	ND	ND
F-20 @ floor S0797206	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
* = Estimated value.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-12-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention:	Mr. Martin Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Analyzed: Matrix:	07-08-97 Soil

Project : 930121.200/ERS/Specialty Mill

	TPHd PPM
Reporting Limit:	1.0
QA/QC PARAMETER	
Matrix Blank	ND
PERCENT RECOVERIES	
Matrix Spike	66%
Matrix Spike Duplicate	69%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Spikes & Spike Duplicates were each spiked with 5000 ug of diesel standard.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550, followed by modified EPA Method 8015, with direct sample injection into a GC equipped with an FID.

Laboratory Representative

07-08-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Analyzed: 07-08-97
Matrix: Soil

Project : 930121.200/ERS/Specialty Mill

	TPHo PPM
Reporting Limit:	10
QA/QC PARAMETER	
Matrix Blank	ND
PERCENT RECOVERIES	
Matrix Spike	68%
Matrix Spike Duplicate	78%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Spikes & Spike Duplicates were each spiked with 5000 ug of motor oil standard.

ANALYTICAL PROCEDURES

TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

Laboratory Representative

07-09-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Analyzed: 07-08-97
Matrix: Soil

Project : 930121.200/ERS/Specialty Mill

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM
Reporting Limit:	0.005	0.005	0.005	0.005
QA/QC PARAMETER				
Matrix Blank	ND	ND	ND	ND
PERCENT RECOVERIES				
Matrix Spike	86%	78%	69%	64%
Matrix Spike Duplicate	81%	74%	67%	62%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

All surrogate recoveries were within 30% of target values.
Spikes & Spike Duplicates were each spiked with 250 ng BTEX standard.

ANALYTICAL PROCEDURES

BTEX– Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) .

Laboratory Representative

07-09-97
Date Reported

APPENDIX N

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Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Analyzed: 07-10-97
Matrix: Soil

Project : 930121.200/ERS/Specialty Mill

	TPHo PPM
Reporting Limit:	10
QA/QC PARAMETER	
Matrix Blank	ND
PERCENT RECOVERIES	
Matrix Control Spike	100%
Matrix Spike Duplicate	102%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Spikes & Spike Duplicates were each spiked with 5000 ug of motor oil standard.

ANALYTICAL PROCEDURES

TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID. .

Laboratory Representative

07-10-97
Date Reported

APPENDIX N

EXCELCHEM
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500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Analyzed: 07-11-97
Matrix: Soil

Project : 930121.200/ERS/Specialty Mill

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM
Reporting Limit:	0.005	0.005	0.005	0.005
QA/QC PARAMETER				
Matrix Blank	ND	ND	ND	ND
PERCENT RECOVERIES				
Matrix Spike	94%	92%	89%	86%
Matrix Spike Duplicate	91%	89%	86%	82%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

All surrogate recoveries were within 30% of target values.
Spikes & Spike Duplicates were each spiked with 250 ng BTEX standard.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).

Laboratory Representative

07-11-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Analyzed: 07-12-97
Matrix: Soil

Project : 930121.200/ERS/Specialty Mill

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM
Reporting Limit:	0.005	0.005	0.005	0.005
QA/QC PARAMETER				
Matrix Blank	ND	ND	ND	ND
PERCENT RECOVERIES				
Matrix Spike	107%	108%	107%	108%
Matrix Spike Duplicate	103%	103%	102%	102%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

All surrogate recoveries were within 30% of target values.
Spikes & Spike Duplicates were each spiked with 250 ng BTEX standard.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) .

Laboratory Representative

07-12-97
Date Reported

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

797026

Project Manager: Martin E. Lay
Phone #: (707) 441-8855
Company/Address: SHN 812 W. Wabash Eureka, Ca. 95501
FAX #: (707) 441-8877
Project Number: 093121.200
P.O.#:
Project Name: ERS Speciality Mill
Project Location: Arcata, Ca.
Sampler Signature: David R. Paine

Sample ID	Sampling DATE	Sampling TIME	Container: VOA	SLEEVE	1L GLASS	1L PLASTIC	250 ml glass	Method Preserved: HCl	HNO_3	ICE	NONE	Matrix: WATER	SOIL
R-Ef	7/9/97	1215					X				X		X
R-Es		1220											
R-Wf		1225											
R-Ws		1230											
R-Nf	7/10/97	0745											
R-Ns		0750											
R-Ss		0835											
R-Sf		0830											

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015)	TPH as Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	W.E.T.(F)	TOTAL (✓)	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni
			S07971176														X				X
			S07971177																		X
			S07971178																		X
			S07971179																		X
			S07971180																		X
			S07971181																		X
			S07971182																		X
			S07971183																		X

TAT: RUSH SERVICE (12 hr) or (24 hr) | EXPEDITED SERVICE (48 hr) or (1 wk) | STANDARD SERVICE (2wk)

Relinquished by:	Date	Time	Received by:	Remarks:
Curtis D. Coleman	7-11-97	1700		
Relinquished by	Date	Time	Received by:	
Relinquished by	Date	Time	Received by Laboratory:	Bill To:
	7/11/97	1750		

APPENDIX N

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-09-97 07-11-97 07-17-97
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	R-EF		
Lab ID:	S0797176		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	1.5	30.5
Lead (Pb)	7420	2.5	7.2
Nickel (Ni)	7520	3	50.7
Zinc (Zn)	7950	7.5	62.5

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-09-97 07-11-97 07-17-97
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	R-ES		
Lab ID:	S0797177		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	1.5	25.2
Lead (Pb)	7420	2.5	21.2
Nickel (Ni)	7520	3	44
Zinc (Zn)	7950	7.5	57.3

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Sampled: 07-09-97
Date Received: 07-11-97
Date Analyzed: 07-17-97

Project : 093121.200/ERS Specialty Mill
Sample ID: R-WF
Lab ID: S0797178

Matrix: Soil

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	3	49.9
Lead (Pb)	7420	2.5	9.1
Nickel (Ni)	7520	6	87
Zinc (Zn)	7950	7.5	87.2

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-11-97 07-11-97 07-17-97
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	R-WS		
Lab ID:	S0797179		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	1.5	15.4
Lead (Pb)	7420	2.5	5.4
Nickel (Ni)	7520	1.5	22.7
Zinc (Zn)	7950	7.5	37.0

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Sampled: 07-10-97
Date Received: 07-11-97
Date Analyzed: 07-17-97

Project : 093121.200/ERS Specialty Mill
Sample ID: R-NF
Lab ID: S0797180

Matrix: Soil

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	1.5	27.7
Lead (Pb)	7420	2.5	7.0
Nickel (Ni)	7520	3	49
Zinc (Zn)	7950	6	56.6

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-10-97 07-11-97 07-17-97
Project : Sample ID: Lab ID:	093121.200/ERS Specialty Mill R-NS S0797181	Matrix:	Soil

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	3	35.7
Lead (Pb)	7420	2.5	3.5
Nickel (Ni)	7520	3	55.1
Zinc (Zn)	7950	6	57.9

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Sampled: 07-10-97
Date Received: 07-11-97
Date Analyzed: 07-17-97

Project : 093121.200/ERS Specialty Mill
Sample ID: R-SS
Lab ID: S0797182

Matrix: Soil

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	6	62.4
Lead (Pb)	7420	2.5	8.1
Nickel (Ni)	7520	6	85.5
Zinc (Zn)	7950	7.5	87.7

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-10-97 07-11-97 07-17-97
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	R-SF		
Lab ID:	S0797183		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	6	59.2
Lead (Pb)	7420	2.5	8.0
Nickel (Ni)	7520	6	92.8
Zinc (Zn)	7950	7.5	90.6

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-17-97
Matrix: Soil

Project : 093121.200/ERS Specialty Mill

MS/MSD RECOVERIES **Unit = mg\Kg**

Element	EPA Method	Sample Conc.	Spike Conc.	MS	MS% Recovery	MSD	MSD% Recovery	% RPD
Cd	7130	ND	10	9.74	97%	9.78	98%	0%
Cr	7190	49.9	20	19.7	99%	21.5	107%	9%
Pb	7420	9.06	20	22.0	110%	22.3	112%	1%
Ni	7520	86.8	20	19.3	97%	20.4	102%	6%
Zn	7950	87.2	10	11.1	111%	12.4	124%	11%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-17-97
Matrix: Soil

Project : 093121.200/ERS Specialty Mill

LCS/LCSD RECOVERIES **Unit = mg\Kg**

Element	EPA Method	Spike Conc.	LCS	LCS% Recovery	LCSD	LCSD% Recovery	% RPD
Cd	7130	10	9.78	98%	10.2	102%	4%
Cr	7190	20	17.8	89%	17.6	88%	1%
Pb	7420	20	21.6	108%	21.7	108%	0%
Ni	7520	20	18.1	91%	18.1	91%	0%
Zn	7950	10	10.3	103%	9.9	99%	4%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-21-97
Date Reported

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

797025

LABORATORY NUMBER:

Attention: Marty Kay
Results & Invoice to: SHN Consulting Engrs
Address: 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to: _____

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other: _____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS Specialty Mill
Purchase Order Number: _____

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_4O_2Cl$; g—other

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: Cd, Cr, Ni, Pb, Zn
797184	B-ESE 4'	7-11-97	1435	S		11	X
797185	B-ESE 7'		1440				X
797186	B-WSE 10'		1442				X
797187	B-NSE 4'		1444				X
797188	B-NWE		1447				X
797189	B-EE	↓	1450	↓			X

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Run TTLC & CAM 5

APPENDIX N

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis A Coburn Curtis Coburn	7-11-97/1700		7/11/97

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

RECD JUL 28 1997

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-11-97 07-11-97 07-17-97
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	B-ES @ 4'		
Lab ID:	S0797184		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	4.5	69.4
Lead (Pb)	7420	2.5	9.3
Nickel (Ni)	7520	9	173
Zinc (Zn)	7950	7.5	79.1

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-11-97 07-11-97 07-17-97
Project : Sample ID: Lab ID:	093121.200/ERS Specialty Mill B-ES @ 7' S0797185	Matrix:	Soil

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	4.5	68.2
Lead (Pb)	7420	2.5	10.5
Nickel (Ni)	7520	7.5	124
Zinc (Zn)	7950	7.5	95.5

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Sampled: 07-11-97
Date Received: 07-11-97
Date Analyzed: 07-17-97

Project : 093121.200/ERS Specialty Mill
Sample ID: B-WS @ 10'
Lab ID: S0797186

Matrix: Soil

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	4.5	53.2
Lead (Pb)	7420	2.5	5.9
Nickel (Ni)	7520	7.5	103
Zinc (Zn)	7950	7.5	72.4

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay	Date Sampled:	07-11-97
	SHN Consulting Engineers	Date Received:	07-11-97
	812 W. Wabash Ave	Date Analyzed:	07-17-97
	Eureka, CA 95501		
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	B-NS @ 4'		
Lab ID:	S0797187		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	4.5	72.7
Lead (Pb)	7420	2.5	8.4
Nickel (Ni)	7520	7.5	136
Zinc (Zn)	7950	7.5	89.8

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-11-97 07-11-97 07-17-97
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	B-NWF		
Lab ID:	S0797188		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	4.5	67.8
Lead (Pb)	7420	2.5	9.3
Nickel (Ni)	7520	7.5	123
Zinc (Zn)	7950	7.5	91.7

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-11-97 07-11-97 07-17-97
Project :	093121.200/ERS Specialty Mill	Matrix:	Soil
Sample ID:	B-EF		
Lab ID:	S0797189		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	4.5	62.4
Lead (Pb)	7420	2.5	8.0
Nickel (Ni)	7520	7.5	119
Zinc (Zn)	7950	7.5	92.3

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-17-97
Matrix: Soil

Project : 093121.200/ERS Specialty Mill

MS/MSD RECOVERIES **Unit = mg\Kg**

Element	EPA Method	Sample Conc.	Spike Conc.	MS	MS% Recovery	MSD	MSD% Recovery	% RPD
Cd	7130	ND	10	9.74	97%	9.78	98%	0%
Cr	7190	49.9	20	19.7	99%	21.5	107%	9%
Pb	7420	9.06	20	22.0	110%	22.3	112%	1%
Ni	7520	86.8	20	19.3	97%	20.4	102%	6%
Zn	7950	87.2	10	11.1	111%	12.4	124%	11%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-21-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-17-97
Matrix: Soil

Project : 093121.200/ERS Specialty Mill

LCS/LCSD RECOVERIES **Unit = mg\Kg**

Element	EPA Method	Spike Conc.	LCS	LCS% Recovery	LCSD	LCSD% Recovery	% RPD
Cd	7130	10	9.78	98%	10.2	102%	4%
Cr	7190	20	17.8	89%	17.6	88%	1%
Pb	7420	20	21.6	108%	21.7	108%	0%
Ni	7520	20	18.1	91%	18.1	91%	0%
Zn	7950	10	10.3	103%	9.9	99%	4%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-21-97
Date Reported

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

797060

LABORATORY NUMBER:

Attention: Marty Kay
Results: SHN Consulting Engrs
Address: 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☒ Other: ETD
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS Specialty
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: Pb total	ANALYSIS: EPA 8240
797207	E-NE@4'	7-12-97	1048	S	11		X	13
797208	E-FNE@4'	"	1051				X	
797209	E-ESE@4½'	"	1053				X	
797210	D-13@5'	"	1330	S				X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_4O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Marty Kay Martin Kay	7/12/97 1715		7/12/97 1715

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

APPENDIX N

EXCELCHEM REC'D AUG 0 8 1997
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-12-97 07-12-97 07-16-97
Project :	093121.200/ERS Specialty	Matrix:	Soil
Sample ID:	F-NE @ 4'		
Lab ID:	S0797207		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	4.4

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-24-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-12-97 07-12-97 07-16-97
Project :	093121.200/ERS Specialty	Matrix:	Soil
Sample ID:	F-EN @ 4'		
Lab ID:	S0797208		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	3.2

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-24-97
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-12-97 07-12-97 07-16-97
Project :	093121.200/ERS Specialty	Matrix:	Soil
Sample ID:	F-ES @ 4 1/2'		
Lab ID:	S0797209		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	4.7

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-24-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Sampled: 07-12-97
Date Received: 07-12-97
Date Analyzed: 07-22-97

Project : 093121.200/ERS Specialty
Sample ID: D-13 @ 5'
Lab ID: S0797210

Matrix: Soil

8240 GCMS	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)	8240 GCMS	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Dichlorodifluoromethane	0.005	ND	2-Butanone	0.005	ND
Chloromethane	0.005	ND	Bromodichloromethane	0.005	ND
Vinyl Chloride	0.005	ND	Cis-1,3-Dichloropropene	0.005	ND
Bromomethane	0.005	ND	Trans-1,3-Dichloropropene	0.005	ND
Chloroethane	0.005	ND	1,1,2-Trichloroethane	0.005	ND
Trichlorofluoromethane	0.005	ND	Trans-1,4-dichloro-2-butene	0.005	ND
Acetone	0.050	ND	Toluene	0.005	ND
1,1-Dichloroethene	0.005	ND	Tetrachloroethene	0.005	ND
Methylene Chloride	0.010	ND	2-Hexanone	0.005	ND
Carbon disulfide	0.005	ND	4-Methyl-2-pentanone	0.005	ND
Trans-1,2-Dichloroethene	0.005	ND	Chlorobenzene	0.005	ND
1,1-Dichloroethane	0.005	ND	Ethylbenzene	0.005	ND
Chloroform	0.005	ND	M+P-Xylene	0.005	ND
1,2-Dichloroethane	0.005	ND	O-Xylene	0.005	ND
Iodomethane	0.005	ND	Styrene	0.005	ND
Dibromochloromethane	0.005	ND	Bromoform	0.005	ND
1,1,1-Trichloroethane	0.005	ND	1,1,2,2-Tetrachloroethane	0.005	ND
Carbon Tetrachloride	0.005	ND	1,3-Dichlorobenzene	0.005	ND
Benzene	0.005	ND	1,4-Dichlorobenzene	0.005	ND
Trichloroethene	0.005	ND	1,2-Dichlorobenzene	0.005	ND
1,2-Dichloropropane	0.005	ND			

ppm = Parts per million= mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Surrogate Recovery -

1,2-Dichloroethane d-4	= 111%
Toluene d-8	= 116%
4-Bromofluorobenzene	= 110%

ANALYTICAL PROCEDURES

Organic Volatiles are measured using EPA Method 8240 which utilizes a purge and trap interfaced to a gas chromatograph (GC) equipped with a mass spectrometer.

Laboratory Representative

07-24-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-16-97
Matrix: Soil

Project : 093121.200/ERS Specialty

MS/MSD RECOVERIES **Unit = mg\Kg**

Element	EPA Method	Sample Conc.	Spike Conc.	MS	MS% Recovery	MSD	MSD% Recovery	% RPD
Pb	7420	3.18	20	21.1	106%	20.9	105%	1%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-24-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-16-97
Matrix: Soil

Project : 093121.200/ERS Specialty

LCS/LCSD RECOVERIES **Unit = mg\Kg**

Element	EPA Method	Spike Conc.	LCS	LCS% Recovery	LCSD	LCSD% Recovery	% RPD
Pb	7420	20	20.4	102%	21.0	105%	3%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-24-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-24-97
Matrix: Soil

Project : 093121.200/ERS Specialty

Compound	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery
1,1-dichloroethene	111%	111%
benzene	96%	98%
trichloroethene	107%	106%
toluene	101%	102%
chlorobenzene	103%	103%

ppm = Parts per million = mg/kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

Organic Volatiles are measured using EPA Method 8240 which utilizes a purge and trap interfaced to a gas chromatograph (GC) equipped with a mass spectrometer.

Laboratory Representative

07-24-97
Date Reported

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

797034

LABORATORY NUMBER:

Attention: Marty Kay
Results ~~& Invoice~~ to: SHN Consulting Engr
Address: 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to:

TAT: [X] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:__/__/__
Final Report: FAX [ ] Verbal [ ] By:__/__/__

PROJECT INFORMATION
Project Number: 09312.200
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHG/BTEX
97211	E-21 @ 4½'	7-12-97	1715	S		3	X
97212	E-22 @ 7'	"	1716	"			X
97213	E-23 @ 4'	"	1720	"			X
97214	E-24 @ 6'	"	1721	"			X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

APPENDIX N

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Colson Curtis Colson	7/12/97 1742		7/12/97 1742

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Sampled: 07-12-97
Date Received: 07-12-97
BTEX Analyzed: 07-14-97
TPHg Analyzed: 07-14-97

Project : 930121.200/ERS Specialty Mill

Matrix: Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
F-21 @ 4 1/2' S0797211	ND	ND	ND	ND	4.4
F-22 @ 7' S0797212	ND	ND	ND	ND	ND
F-23 @ 4' S0797213	ND	ND	ND	ND	ND
F-24 @ 6' S0797214	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-14-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention:	Mr. Martin Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Analyzed: Matrix:	07-18-97 Soil
Project :	930121.200/ERS Specialty Mill		

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM
Reporting Limit:	0.005	0.005	0.005	0.005
QA/QC PARAMETER				
Matrix Blank	ND	ND	ND	ND
PERCENT RECOVERIES				
Matrix Spike	102%	102%	101%	103%
Matrix Spike Duplicate	102%	102%	101%	104%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

All surrogate recoveries were within 30% of target values.
Spikes & Spike Duplicates were each spiked with 250 ng BTEX standard.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) .

Laboratory Representative

07-18-97
Date Reported

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

P. 1 of 1

797035

LABORATORY NUMBER:

Attention: Marty Lay
Results ~~& Invoice~~ to: SHN Consulting Engr
Address: 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to:

PROJECT INFORMATION

Project Number: 093121.200
Project Name: ERS Speciality Mill
Purchase Order Number:

PRESERVATIVE:
CONTAINER: 3
ANALYSIS: TPHG / BTEX

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	TPHG / BTEX
0797249	F-25 @ 3'	7-14-97	1233	S	X
0797250	F-26 @ 5½'	↓	1235	↓	X
0797251	F-27 @ 3'	↓	1350	↓	X
0797252	F-28 @ 6½'	↓	1352	↓	X
0797253	F-29 @ floor	↓	1535	↓	X
0797254	F-30 @ 5'	↓	1542	↓	X

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Coburn Curtis Coburn	7-14-97 1620	Nandy Roose Engelchem Nandy Roose	7/15/97 8:00 AM

TAT: [✓] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [X] Other: ASAP
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By: __/__/
Final Report: FAX [ ] Verbal [ ] By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
Discussed Rapid Turn w/ John S.
F-30 May require dilution / sewer hot smell

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

REC'D JUL 2 8 1997

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-14-97
	SHN Consulting Engineers	Date Received:	07-15-97
	812 W. Wabash Ave	BTEX Analyzed:	07-15-97
	Eureka, CA 95501	TPHg Analyzed:	07-15-97
Project :	930121.200/ERS Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
F-25 @ 3' S0797249	ND	ND	ND	ND	ND
F-26 @ 5 1/2' S0797250	ND	ND	ND	ND	ND
F-27 @ 3' S0797251	ND	ND	ND	ND	ND
F-28 @ 6 1/2' S0797252	ND	ND	ND	ND	ND
F-29 @ floor S0797253	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX– Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg–Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-15-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-14-97
	SHN Consulting Engineers	Date Received:	07-15-97
	812 W. Wabash Ave	BTEX Analyzed:	07-15-97
	Eureka, CA 95501	TPHg Analyzed:	07-15-97
Project :	930121.200/ERS Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.050	0.050	0.050	0.050	26
SAMPLE Laboratory Identification:					
F-30 @ 5' S0797254	ND	ND	0.050	0.279	447

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-15-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Analyzed: 07-18-97
Matrix: Soil

Project : 930121.200/ERS Specialty Mill

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM
Reporting Limit:	0.005	0.005	0.005	0.005
QA/QC PARAMETER				
Matrix Blank	ND	ND	ND	ND
PERCENT RECOVERIES				
Matrix Spike	102%	102%	101%	103%
Matrix Spike Duplicate	102%	102%	101%	104%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

All surrogate recoveries were within 30% of target values.
Spikes & Spike Duplicates were each spiked with 250 ng BTEX standard.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization,detector (PID) .

Laboratory Representative

07-18-97
Date Reported

APPENDIX N

P. 1 of 2

![North Coast Laboratories logo]

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

797063

LABORATORY NUMBER: ____

Attention: Marty Lay
Results ~~& Invoice~~ to: SHN Consulting Engr
Address: 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to: ____

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS Specialty Mill
Purchase Order Number: ____

PRESERVATIVE:
CONTAINER: 13

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS: TPHG/BTEX	TPHd/TPHO		
	D-13	7-15-97	1205	S	~~X~~	X		50797259
	D-14	↓	1207	↓	~~X~~	X	↓	260
	D-15		1210		~~X~~	X		261
	D-16		1213		~~X~~	X		262
	D-17		1217		~~X~~	X		263
	D-18		1220		~~X~~	X		264
	F-31 @ 4'		1408		X			265
	F-32 @ 4½		1412		X			266
	F-33 @ 4½		1520		X			267
	F-34 @ 6'		1522		X			50797268

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Coburn Curt. Coburn	7/15/97 1645	Emilie Alexander	7/16/8:30

TAT: ☑ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other: ____
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By: __/__/__
Final Report: FAX [ ] Verbal [ ] By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—$NaOH$; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA ____
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

197063

LABORATORY NUMBER:

Attention: Marty Lay
Results ~~& Invoice~~ to: SHN Consulting Engrs
Address: 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to:

TAT: ~~[ ]~~ 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:__/__/__
Final Report: FAX [ ] Verbal [ ] By:__/__/__

PROJECT INFORMATION
Project Number: 09312.200
Project Name: ERS Specialty Mill
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPHG/BTEX
	F-35@floor	7-15-97	1558	S	13		X

S0797269

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_4O_2Cl$; g—other

APPENDIX N

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis Cobarn Curtis Cobarn	7/15/97 1645	Emilie Alexander	7/16/8:30

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

197063

P. 1 of 2

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

LABORATORY NUMBER: ______

Attention: Marty Ley
Results ~~& Invoice~~ to: SHN Consulting Engr
Address: 812 W Wabash Ave
Eureka, CA 95501
Phone: (707) 441-8855
Copies of Report to: ______

PROJECT INFORMATION
Project Number: 093121-200
Project Name: ERS Specialty Mill
Purchase Order Number: ______

CONTAINER: 13

ANALYSES: TPHG/BTEX; TPHD/MO

(circled) Chg. 7/16/97 LH

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	TPHG/BTEX	TPHD/MO	
	B-13	7-15-97	1205	S		X	S0797259
	B-14		1207			X	260
	B-15		1210			X	261
	B-16		1213			X	262
	B-17		1217			X	263
	B-18		1220			X	264
	E-31 @ 4'		1403		X		265
	E-32 @ 4½'		1412		X		266
	E-33 @ 4½'		1520		X		267
	E-34 @ 6'		1535		X		S0797268

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Curtis D. Coburn Curt Coburn	7/15/97 1645	Emilie Alexander	7/16/ 8:30

TAT: ☑ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

812 W. Wabash
Eureka, CA 95501-2138
Phone: 707/441-8855
FAX: 707/441-8877
E-mail: shninfo@shn-engr.com

FAX COVER SHEET

Reference: ERS — SHN
Date: 7/16/97
To: Excelchem

Fax #: 916 773-4784
From: Marcy Lay
SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.

Fax #:
Subject: Soil Sample Analysis
No. Pages Total: 2

Improper SHN designation of Analysis for
D-13 Through D-18
Do TPHD & TPHMO
NOT
TPHG / BTEX
— Noted on chain sheet 1 of 2 —
All other samples per chain of custody

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-15-97
	SHN Consulting Engineers	Date Received:	07-16-97
	812 W. Wabash Ave	TPHd Analyzed:	07-16-97
	Eureka, CA 95501	TPHo Analyzed:	07-16-97
Project :	930121.200/ERS Specialty Mill	Matrix:	Soil

	Reporting Limit PPM	TPHd Result PPM	Reporting Limit PPM	TPHo Result PPM
SAMPLE Laboratory Identification:				
D-13 S0797259	1.1	ND	11	29
D-14 S0797260	461	ND	4610	32900
D-15 S0797261	1.2	ND	11	ND
D-16 S0797262	1.2	ND	12	ND
D-17 S0797263	1.2	ND	12	ND
D-18 S0797264	1.1	ND	11	30

PPM = Parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.
TPHo--Total petroleum hydrocarbons as oil are measured by extraction using EPA Method 3550 followed by modified EPA Method 8015 with direct sample injection into a GC equipped with a FID.

Laboratory Representative

07-17-97
Date Reported

EXCELCHEM ENVIRONMENTAL LABS IS CERTIFIED BY THE STATE OF CALIFORNIA
DEPARTMENT OF HEALTH SERVICES AS A HAZARDOUS WASTE TESTING LABORATORY
(Certification No. 2119)

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-15-97
	SHN Consulting Engineers	Date Received:	07-16-97
	812 W. Wabash Ave	BTEX Analyzed:	07-16-97
	Eureka, CA 95501	TPHg Analyzed:	07-16-97
Project :	930121.200/ERS Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
D-13 S0797259	ND	ND	ND	ND	ND
D-14* S0797260	ND	ND	ND	ND	ND
D-15 S0797261	ND	ND	ND	ND	ND
D-16 S0797262	ND	ND	ND	ND	ND
D-17 S0797263	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.
* = Poor recovery due to matrix interference.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-17-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay	Date Sampled:	07-15-97
	SHN Consulting Engineers	Date Received:	07-16-97
	812 W. Wabash Ave	BTEX Analyzed:	07-16-97
	Eureka, CA 95501	TPHg Analyzed:	07-16-97
Project :	930121.200/ERS Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
F-31 @ 4' S0797265	ND	ND	ND	ND	ND
F-32 @ 4 1/2' S0797266	ND	ND	ND	ND	ND
F-34 @ 6' S0797268	ND	ND	ND	ND	ND
F-35 @ floor S0797269	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-17-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Martin Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: BTEX Analyzed: TPHg Analyzed:	07-15-97 07-16-97 07-16-97 07-16-97
Project :	930121.200/ERS Specialty Mill	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.050	0.050	0.050	0.050	10
SAMPLE Laboratory Identification:					
F-33 @ 4 1/2' S0797267	ND	ND	ND	ND	86

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-17-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Martin Lay
SHN Consulting Engineers
812 W. Wabash Ave
Eureka, CA 95501

Date Analyzed: 07-18-97
Matrix: Soil

Project : 930121.200/ERS Specialty Mill

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM
Reporting Limit:	0.005	0.005	0.005	0.005
QA/QC PARAMETER				
Matrix Blank	ND	ND	ND	ND
PERCENT RECOVERIES				
Matrix Spike	102%	102%	101%	103%
Matrix Spike Duplicate	102%	102%	101%	104%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

All surrogate recoveries were within 30% of target values.
Spikes & Spike Duplicates were each spiked with 250 ng BTEX standard.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) .

Laboratory Representative

07-18-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention:	Mr. Martin Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Analyzed: Matrix:	07-17-97 Soil

Project : 930121.200/ERS Specialty Mill

	TPHd PPM
Reporting Limit:	1.0
QA/QC PARAMETER	
Matrix Blank	ND
PERCENT RECOVERIES	
Laboratory Control Spike	65%
Laboratory Control Spike Duplicate	75%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Spikes & Spike Duplicates were each spiked with 5000 ug of diesel standard.

ANALYTICAL PROCEDURES

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550, followed by modified EPA Method 8015, with direct sample injection into a GC equipped with an FID.

Laboratory Representative

07-18-97
Date Reported

REC'D AUG 05 1997

P. 1 of 1

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

797054

LABORATORY NUMBER:

Attention: Marty Lay
Results & Invoice to: SHN Consulting
Address: 812 W. Wabash
Eureka CA 95501
Phone: (707) 441-8855
Copies of Report to:

TAT: ☐ 24 Hr ☐ 48 Hr ☒ 5 Day ☐ 5–7 Day
☐ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By:__/__/__
Final Report: FAX ☐ Verbal ☐ By:__/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: Lead	Cd, Cr, Pb, Zn, Ni
797310	B-SES	7/16/97	750	S				X
797311	B-SWS		755					X
797312	B-SE		757					X
797313	F-SW@5'		1230				X	
797314	F-WW1@4'		1235				X	
797315	F-WW2@4'		1240				X	
797316	F-WW3@3'		1245				X	
797317	F-NRAMP(floor)@3'		1250				X	

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_4O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

APPENDIX N

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Dave Rourke	7/17/97 0A:7	Dmitri Alexandr	7/19/1000

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

REC'D AUG 0 5 1997

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	B-SES		
Lab ID:	S0797310		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	3	52
Lead (Pb)	7420	2.5	6.6
Nickel (Ni)	7520	6	112
Zinc (Zn)	7950	6	69

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	B-SWS		
Lab ID:	S0797311		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	3	45
Lead (Pb)	7420	2.5	4.3
Nickel (Ni)	7520	6	97
Zinc (Zn)	7950	6	62

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	B-SF		
Lab ID:	S0797312		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Cadmium (Cd)	7130	0.3	ND
Chromium (Cr)	7190	3	52.9
Lead (Pb)	7420	2.5	7.2
Nickel (Ni)	7520	7.5	119
Zinc (Zn)	7950	6	73

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	F-SW @ 5'		
Lab ID:	S0797313		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	6.1

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	F-WW1 @ 4'		
Lab ID:	S0797314		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	6.2

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	F-WW2 @ 4'		
Lab ID:	S0797315		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	5.9

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	F-WW3 @ 3'		
Lab ID:	S0797316		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	8.4

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay SHN Consulting Engineers 812 W. Wabash Ave Eureka, CA 95501	Date Sampled: Date Received: Date Analyzed:	07-16-97 07-18-97 07-22-97
Project :	093121.200/ERS	Matrix:	Soil
Sample ID:	F-NRAMP(floor) @ 3'		
Lab ID:	S0797317		

COMPOUND	EPA METHOD	Reporting Limit (mg/Kg)	Measured Value (mg/Kg)
Lead (Pb)	7420	2.5	6.3

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligrams per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM

ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-22-97
Matrix: Soil

Project : 093121.200/ERS

MS/MSD RECOVERIES

Unit = mg\Kg

Element	EPA Method	Sample Conc.	Spike Conc.	MS	MS% Recovery	MSD	MSD% Recovery	% RPD
Cd	7130	0.04	10	9.3	93%	9.32	93%	0%
Cr	7190	44.6	20	19.8	99%	19.2	96%	3%
Pb	7420	4.28	20	20.2	101%	20.2	101%	0%
Ni	7520	97.1	20	21.9	109%	21.1	105%	4%
Zn	7950	62.5	10	10.1	101%	9.62	96%	5%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-22-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-22-97
Matrix: Soil

Project : 093121.200/ERS

LCS/LCSD RECOVERIES

Unit = mg\Kg

Element	EPA Method	Spike Conc.	LCS	LCS% Recovery	LCSD	LCSD% Recovery	% RPD
Cd	7130	10	9.42	94%	9.48	95%	1%
Cr	7190	20	18.2	91%	18.2	91%	0%
Pb	7420	20	20.7	104%	20.0	100%	3%
Ni	7520	20	19.2	96%	19.6	98%	2%
Zn	7950	10	9.68	97%	9.56	96%	1%

Samples were digested using EPA Method 3050A.
ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

Laboratory Representative

07-25-97
Date Reported

REC'D AUG 05 1997

P. 1 of 1

NORTH COAST LABORATORIES LTD.

5680 West End Road • Arcata, California 95521
707-822-4649 • FAX 707-822-6831

Chain of Custody

797055

LABORATORY NUMBER:

Attention: Marty Lay
Results & Invoice to: SHN Consulting
Address: 812 W Wabash
Eureka, CA. 95501
Phone: 441-8855
Copies of Report to:

TAT: [ ] 24 Hr [ ] 48 Hr [X] 5 Day [ ] 5–7 Day
[ ] STD (2–3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [ ] Verbal [ ] By:__/__/_
Final Report: FAX [ ] Verbal [ ] By:__/__/__

PROJECT INFORMATION
Project Number: 093121.200
Project Name: ERS
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPHgas/BTEX
197308	F-36 @ 3'	7/16/97	1615	S			X
197309	F-37 @ 6'	"	1620	S			X

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

APPENDIX N

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Dave O'Rourke / Dave O'Rourke	7/17/97 9:30	Emilie Alexander	7/18/1000

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA [ ]
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

APPENDIX N

REC'D AUG 05 1997

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Marty Lay	Date Sampled:	07-16-97
	SHN Consulting Engineers	Date Received:	07-18-97
	812 W. Wabash Ave	BTEX Analyzed:	07-21-97
	Eureka, CA 95501	TPHg Analyzed:	07-21-97
Project :	093121.200/ERS	Matrix:	Soil

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM	TPHg PPM
Reporting Limit:	0.005	0.005	0.005	0.005	1.0
SAMPLE Laboratory Identification:					
F-36 @ 3' S0797308	ND	ND	ND	ND	ND
F-37 @ 6' S0797309	ND	ND	ND	ND	ND

ppm = Parts per million = mg/Kg = milligram per Kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).
TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by modified EPA Method 8015, which utilizes a GC equipped with an FID.

Laboratory Representative

07-25-97
Date Reported

APPENDIX N

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

QA/QC REPORT

Attention: Mr. Marty Lay
SHN Consulting Engineers
812 W. Wabash Ave.
Eureka, CA 95501

Date Analyzed: 07-21-97
Matrix: Soil

Project : 093121.200/ERS

	Benzene PPM	Toluene PPM	Ethyl-benzene PPM	Total Xylenes PPM
Reporting Limit:	0.005	0.005	0.005	0.005
QA/QC PARAMETER				
Matrix Blank	ND	ND	ND	ND
PERCENT RECOVERIES				
Laboratory Control Spike	92%	92%	93%	95%
Laboratory Control Spike Duplicate	95%	96%	96%	98%

ppm = parts per million = mg/Kg = milligram per kilogram
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

All surrogate recoveries were within 30% of target values.
Spikes & Spike Duplicates were each spiked with 250 ng BTEX standard.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) .

Laboratory Representative

07-25-97
Date Reported

HUMBOLDT COUNTY
DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

100 H STREET, SUITE 100, EUREKA, CA 95501 (707) 445-6215 FAX (707) 441-5699

4 June 1998

Eel River Saw Mills, Incorporated
Attn: Mr. Dennis Scott
1053 Northwestern Avenue
Fortuna, California 95540

RE: Eel River Saw Mills Inc. -- Specialty Mill Site
2000 Foster Avenue, Arcata, California
LOP # 12518

Dear Mr. Scott:

Thank you for the 31 March 1998 *"Site Development Contingency Plan."* The Plan is approved. We understand that Eel River Sawmills (ERS) is planning to redevelop and/or divest of this property. Our review of the file indicates that ERS has removed most of the accessible contaminated soil at the subject site. Some contaminated soil remains at each of the three areas remediated (former mill ramp and vehicle maintenance area; former fuel tank area; debarker area). The post remedial monitoring of groundwater contamination in the vicinity of the former release areas is currently being assessed.

Some contamination remains in soil at the site. The levels of contamination range from insignificant to moderate with one exception beneath the former debarker slab. We recommend that prior to development of the remediated areas, that a risk assessment be performed in order to determine the risk associated with type of development proposed. This should be filed with the final land use map (as appropriate). This agency has no objection to redevelopment of the site, provided the above items are adequately addressed and redevelopment is consistent with the risk assessment.

We would be pleased to meet with interested purchasers or developers to address any concerns. One such concern that we discussed is responsibility for investigation and remediation at the site. ERS will continue as responsible party for the investigation and any necessary remediation at the site. We appreciate your continued cooperation and attention to this matter.

Sincerely,

Dale R Dell'Osso by KA

Dale R. Dell'Osso
Project Geologist
Hazardous Materials Unit

cc: Bonnie Rolandelli, North Coast Regional Water Quality Control Board
Richard Azevedo, North Coast Regional Water Quality Control Board
Martin Lay, SHN Consulting Engineers and Geologists
Steve Tyler, City of Arcata
Arcata Building Department
Humboldt County Planning Department
Humboldt County Building Department

12518.012/697L

APPENDIX O

CONSULTING ENGINEERS
& GEOLOGISTS

812 W. Wabash
Eureka, CA 95501-2138
(707) 441-8855
FAX (707) 441-8877

480 Hemsted Drive
Redding, CA 96002-0117
(916) 221-5424
FAX (916) 221-0135

John R. Selvage, P.E.
K. Jeff Nelson, P.E.
Roland S. Johnson, Jr., C.E.G.

Reference: 093121.200

March 31, 1998

Mr. Dale Dell'Osso, Project Geologist
Humboldt County Department of Health and Social Services
Division of Environmental Health
100 H Street, Suite 100
Eureka, California 95501

SUBJECT: EEL RIVER SAWMILLS, INC., SPECIALTY MILL SITE LOP #12518
SITE DEVELOPMENT CONTINGENCY INVESTIGATION PLAN

Dear Mr. Dell'Osso:

This letter transmits the accompanying site development contingency plan as requested by your letter of February 19, 1998 as sent to Eel River Sawmills, Inc. (ERS) and our discussion of March 4, 1998. SHN Consulting Engineers and Geologists, Inc. (SHN), on behalf of ERS, has prepared this plan for use of the Humboldt county Division of Environmental Health (HCDEH), in issuing a conditional clearance of further soils investigations by ERS on the subject former Specialty Mill site.

ERS has placed the property on the real estate market and requests that the HCDEH conditionally close the site to further soils investigations as per our letter to you dated December 19, 1997.

Please expedite review of this request and the accompanying document, and you may call me at 441-8855 to discuss any aspect of the plan or project findings.

Sincerely,

SHN CONSULTING ENGINEERS
& GEOLOGISTS, INC.

Martin E. Lay, P.E.
Project Manager

MEL:aem
Attachment
cc: Mr. Rick Azevedo, North Coast Regional Water Quality Control Board
Mr. Dennis Scott, ERS

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SITE DEVELOPMENT
CONTAMINATION CONTINGENCY AND SITE SAFETY PLAN

Reference: 930121.200

GENERAL INFORMATION

Project: Contaminated soil contingency plan for potential residential site development at the former Specialty Mill Site

Site Address: 2000 Foster Ave., Arcata, California AP# 505-161-11

Site Telephone:

Plan Prepared by: Martin Lay, P.E., SHN Consulting Engineers and Geologists Inc., Eureka, California, 707/441-8855 Date: March 10, 1998

Plan Prepared for: Eel River Sawmills, Inc., 1053 Northwestern Avenue, Fortuna, CA 95540 707/725-6911

Plan Required by: Humboldt County Division of Environmental Health, Hazardous Materials Unit, Dale Dell'Osso, 707/445-6215

Proposed Dates of Site Development (Phases):

KEY PERSONNEL AND RESPONSIBILITIES

No.	Name	Affiliation	Telephone
Onwer:			
Developer:			
Project Manager:			
Site Safety Supervisor:			
Site Safety Officer:			
Field Personnel:			
Contractors/Subcontractors:			

1.0 INTRODUCTION

This combination Contingency Plan and Site Safety Plan (SSP) establishes general safety requirements for limiting personal exposure to potentially hazardous materials. **The intent of this SSP is to provide health and safety guidelines, for the personal protection of personnel involved with the development and future occupation of land formerly occupied by and**

operated as the Specialty Mill, as related to encountering and dealing with potentially hazardous materials at the site. The application of this SSP is limited to the excavation of suspected or documented contaminated soil and associated subsurface investigation activities and soil sampling.

Historically, portions of the site have been investigated and remediated, under regulatory oversight, with respect to petroleum hydrocarbon (TPH) contaminated soils found to be above regulatory compliance concentration levels. The residual site soils may, in isolated areas, contain TPH as gasoline (TPHG), diesel (TPHD), and motor oil (TPHMO), and the aromatic hydrocarbons; Benzene, Toluene, Ethylbenzene and Xylene (BTEX), resulting from the former industrial use of this site. This SSP shall be implemented immediately upon detection or suspected presence of any contaminants. All site personnel shall read this SSP prior to the conducting of grading, excavation, or other subsurface work on the site. General OSHA requirements involving the operation of heavy equipment, and working in/or near excavations and trenches will be followed at all times.

It is not a focus of this SSP to provide safety guidelines for general construction activities, excavation activities, or heavy equipment operations.

Monitoring during Construction Activities

General construction enviromental monitoring of soils will be conducted by OSHA, 29CFR1910.120(e) trained and certified personnel, with a project designated, Site Safety Supervisor (SSS), or Site Safety Officer (SSO). The SSS/SSO will be responsible for periodically visually observing and olfactory (smell) sensing all site earthworks operations and making a documented evaluation of the potential for the presence or absence of potentially hazardous substances. If such environmental monitoring indicates soils testing of a specific area is necessary, work in the suspect area shall cease immediately, the area and excavated soils will be secured, and the SSS/SSO shall notify the appropriate, State, County, and Local regulatory agencies.

Unless as otherwise directed by responding regulatory personnel, soil test pits, if required, will be excavated to a maximum depth of 5 feet, and logged in accordance with the Unified Soil Classification System (USCS). A minimum of one sample from each test pit, or each 25 cubic yards of suspect soil stockpile, will be appropriately collected as field determined by the monitoring staff (probable surface to 2 foot depth range). The soil sample(s) will be transported, under chain-of-custody documentation, to a California State Certified analytical laboratory, and analyzed for TPHG (EPA method 5030), TPHD and TPHMO (EPA method 3550), and BTEX (EPA method 8020), for initial characterization.

Analytical reports will be submitted to the lead regulatory agency and **further investigation, if warranted**, will be negotiated between the involved parties and the lead regulatory agency representatives.

2.0 HAZARD ANALYSIS

SITE/HAZARD OVERVIEW

Apparent Hazard	Type of Facility	Status of Facility
Serious _____	Impoundment ___	Active _____
Moderate ____	Landfill _____	Inactive __X__
Low ____X___	Open ____X____	Unknown ____
None _____	Other _Old Mill Structure_	

Waste Type(s)	Waste Characteristics	Type/Form of Hazard
Gas _____	Toxic ___X_	Dust ___X___
Liquid __X_	Corrosive ___	Liquid __X___
Sludge ___	Ignitable_X_	Fumes __X___
Solid __X_	Volatile __X_	Vapors __X___
Unknown ___	Radioactive __	Contact __X___
Other ____	Reactive ____	Respiratory __X_
	Unknown ____	Particulates _X_
	Other _____	IDLH _____

Chemical Hazards

The potential chemical hazards at this site include exposure to gasoline, diesel and motor oil. Due to the unknown nature of petrochemical hydrocarbons, the chemical hazard at this site may also include exposure to; the petrochemically associated aromatic hydrocarbons of benzene, toluene, ethylbenzene, and xylenes. A chemical hazard toxicological data table (Table 1.) summarizing published physical and toxicological exposure guideline data for the constituents that have been identified or suspected to be potentially present at the site, has been prepared and is below. Also, following page 4 of this SSP is a chemical hazard identification and assessment table summarizing published physical and toxicological exposure guideline data. The published material referenced for this data represents industry standards and includes the most recent information from the National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values and Biological Exposure Indices.

Exposure to these chemical hazards can take place in the form of direct contact with the contaminated soils or water, and ambient air; or inhalation of ambient air in the vicinity of subsurface activities or remediation activities such as excavation, boring or soil tilling. The ambient air may contain dispersed chemicals as vapors, fumes or mists, and soil dusts to which the chemicals adhere.

Have all contaminants that may be present on site been identified?

Yes__ No __ Unknown _X_

APPENDIX O

TABLE 1.

Substance	Exposure Route	Exposure Symptoms
Lead Oxide, Monoxide	Inhalation* Ingestion	Constipation, insomnia, gastrointestional disorders, anemia, weakness, joint pain
Petroleum Hydrocarbons	Inhalation* Ingestion Skin Absorption*	Dizziness, drowsiness, headache, nausea, eye irritation
Benzene	Inhalation* Skin Absorption* Ingestion Skin and/or Eye Contact	Irritates eyes, nose, resp. system; giddiness; headache; nausea; staggered gait; fatigue, anorexia, lassitude; dermatitis; depression; abdominal pain
Toluene	Inhalation* Skin Absorption Ingestion Skin and/or Eye Contact	Fatigue, weakness,; confusion, euphoria, dizziness; headache; dilated pupils, lacrimation; nervousness; muscle fatigue; insomnia, paresthesia; dermatitis; photophobia
Xylene	Inhalation* Ingestion Skin Absorption Skin and/or Eye Contact	Dizziness, excitement, drowsiness, incoordination, staggering gait, irritates eyes, nose, throat, corneal vascularization, anorexia, nausea, vomiting, abdominal pain, dermatitis
Ethylbenzene	Inhalation* Ingestion Skin and/or Eye Contact	Irritates eyes, mucous membranes, headaches, dermatitis, narcosis, coma

* Primary exposure route(s)

CHEMICAL HAZARDS ASSESSMENT TABLE

(V) TYPE OF HAZARD PROPERTY

a - CORROSIVE
b - FLAMMABLE
c - TOXIC
d - VOLATILE
e - REACTIVE
f - RADIOACTIVE
g - CARCINOGENIC
h - INFECTIOUS

(W) ROUTE OF EXPOSURE

h - SKIN AND/OR EYE CONTACT
i - INHALATION
j - SKIN ABSORBTION
k - INGESTION

(X) ACUTE EFFECTS

a - ABDOMINAL PAIN
b - CENTERAL NERVOUS SYSTEM DEPRESSION
c - COMATOSE
d - CONVULSIONS
e - CONFUSION
f - DIZZINESS
g - DIARRHEA
h - DROWSINESS
i - EYE IRRITATION
j - FEVER
k - HEADACHE
m - NAUSEA
n - RESPIRATORY SYSTEM IRRITATION
o - SKIN IRRITATION
p - TREMORS
q - UNCONSIOUSNESS
r - VOMITING
s - WEAKNESS
t - STAGGERING GAIT
u - DIALATED PUPILS
v - MUSCLE FATIGUE
w - INSOMNIA
x - SWEATING
y - MENTAL IMPAIRMENT

(Y) CHRONIC EFFECTS

a - CENTRAL NERVOUS SYSTEM
b - BLOOD
c - SKIN
d - BONE MARROW
e - EYES
f - RESPIRATORY SYSTEM
g - LIVER
h - KIDNEYS
i - GASTROINTESTINAL TRACT
j - FETAL DEFECTS
k - CARCINOGENIC
l - SUSPECTED CARCINOGEN
m - CARDIO VASCULAR SYSTEM

CHEMICAL	PEL/TLV (ppm)	VAPOR PRESSURE (mm)	BOILING POINT (deg F)	SOLUB-ILITY	VAPOR DENSITY (air=1)	SPECIFIC GRAVITY (water=1)	FLASH POINT (deg F)	MELTING POINT (deg F)	HAZARD TYPE(V)	EXPOSURE ROUTE(W)	EFFECTS ACUTE(X)	EFFECTS CHRON(Y)
Benzene	0.1	75 mm	176	0.18%	2.77	0.88	12 UEL=7.9%	42 LEL=1.3%	b,c,d,g	i,j,k,h	a,f,h,i,k, l,m,n,s	a,b,c,d, e,f
2-Butanone (Methyl Ethyl Ketone)	200	71	175	28%	2.41	0.81	16 UEL=11.4%	-123 LEL=1.4%	b,c	i,k,h	i,m,k,f,q	a,f
Carbon tetrachloride	2 ST (60min)	91	170	0.05%	5.5	1.59	NA	-9	c,e,g	h,i,j,k	b,m,r,o	a,e,g h,f,l
Chlorodiphenyl (42% Chlorine) (PCB)	.001mg/m3 (skin)	0.001	617	insol	-	1.39	?	-2	c,g	h,i,j,k	i, liver acne	c,e,g
Chlorodiphenyl (54% Chlorine) (PCB)	.001mg/m3 (skin)	<.001	687	insol	-	1.38	?	50	c,g	h,i,j,k	i, liver acne	c,e,g
Chloroform	2	160	143	5%	4.12	1.48	N/A UEL=NA	-82 LEL=NA	c,g,b	i,k,h	f,y,l,k, h,i	g,h,i,m,
o-Dichlorobenzene (1,2-Dichlorobenzene)	50	1	357	0.01%	5.07	1.3	151 UEL=9.2%	1 LEL=2.2%	c,b	i,j,k,h	i,h,liver, kidney	c,e,g,h
p-Dichlorobenzene (1,4-Dichlorobenzene)	75	0.4	345	0.008%	5.07	1.25	150 UEL=?	128 LEL=?	c,g,b	i,k,h	k,i,l,q,liver kidney,swelling	
1,2-Dichloroethylene	200	180-264	118-240	0.4%	3.34	1.27	36 UEL=12.8%	-57 to -155 LEL=5.6%	c,b	i,k,h	i,m,b	f,c,a

APPENDIX O

CHEMICAL HAZARDS ASSESSMENT TABLE - CONTINUED

CHEMICAL	PEL/TLV (ppm)	VAPOR PRESSURE (mm)	BOILING POINT (deg F)	SOLUB-ILITY	VAPOR DENSITY (air=1)	SPECIFIC GRAVITY (water=1)	FLASH POINT (deg F)	MELTING POINT (deg F)	HAZARD TYPE(V)	EXPOSURE ROUTE(W)	EFFECTS ACUTE(X)	EFFECTS CHRON(Y)
Diesel	100	<1	370	<0.1%	75	86	140 UEL=7.0%	N/A LEL=0.9%	b,c,d,g	i,j,k,h	i,k,f,p,h	a,b,h,j, leukemia
EthylBenzene	100	7.1	277	0.02%	3.66	0.87	59 UEL=6.7%	-139 LEL=1.0%	b,c,d	i,k,h	c,i,k,m,n,p	a,c,e,f
Ethylene Dichloride (1,2-Dichloroethane)	1	64	182	0.9%	-	1.24	419 UEL=16%	-8 LEL=6.2%	c,g,b	i,j,k,h	b,l,q,n,i	h,g,e,c,
Fluorotrichloromethane (Trichlorofluromethane)	1000	690	75	0.1%	-	1.47	NA	-168	c	h,i,k	p,o,frostbite cardiac, incoordination	m,c
Gasoline	100	760	70	0.1%	5	0.74	-36 UEL=7.6%	-36 LEL=1.4%	b,c,d,g	i,j,k,h	i,k,f,p,n	a,b,h,j, leukemia
Hydrogen Sulfide	10 10 min	>760	-77	0.4%	1.19	GAS	NA UEL=44%	-122 LEL=4%	b,c	h,i,k	c,d,f,i,m IDLH	e,f
Lead (as Pb)	0.1 mg/m3 (air)	-	3164	insol	-	11.34	NA	621	b	i,k,h	a,i,p,s	a,b,h i,j
Methane	-	-	-	-	0.416	GAS	-306 UEL=?	-359 LEL=?	b,c	i	h,p asphyxiant	-
Methyl Chloride	50	>760	-12	0.5%	1.8	gas	N/A UEL=17.4%	-144 LEL=8.1%	c,g,b	i,h	f,l,q,s,d, liver,visual disturbance	a,g,h,c
Methylene Chloride	50	350	104	2%	2.93	1.33	? UEL=22%	-139 LEL=14%	c,g,b	i,k,h	r,u,h,l,i, numbness	e,f,m
Napthalene	10	0.08	424	0.003%	4.42	1.15	315 UEL=5.9%	122 LEL=0.9%	c	i,j,k,h	i,k,e,a,m,r,x, jaundice	e,b,g,h c,a
Pentachlorophenol	0.5mg/m3 (skin)	0.0001	588	0.001%	N/A	1.98	N/A UEL=NA	374 LEL=NA	c,g	i,j,k,h	i,m,r,k,l,q,j, n,x,cough	a,f,e,g, h,c,m
Tetrachloroethylene	25	58	189	0.1%	5.83	1.46	90 UEL=NA	-99 LEL=NA	c,g,b	i,k,h	k,l,q,i,o,n visual disturbance	f,m,g,h, a,c
Tetraethyl Lead	.075mg/m3 (skin)	0.15	228	insol	8.6	1.66	200 UEL=?	-202 LEL=1.8%	c	i,j,k	l,c,d,v	a,b,i,e,
Tetramethyl Lead	.075mg/m3 (skin)	22.5	212	insol	6.5	1.99	100 UEL=?	-15 UEL=?	c	i,j,k	l,c,i,d,v	a,b,i,e,
Toluene	100	22	231	0.05%	3.14	0.87	40 UEL=7.1%	-139 LEL=1.2%	b,c,d	i,j,k,h	e,f,h,i,k, n,r,t,u	c,f
Trichloroethylene	25	58	189	0.1%	4.54	1.46	90 UEL=10.5%	-99 LEL=8%	c,g,b	i,k,h	k,f,o,l,q,i,n vis dist	f,m,g, h,a,c
Vinyl Chloride	1	>760	339	.009%		0.89	120 UEL=33.0%	-106 LEL=3.6%	c,g	i	respiratory	a,g,f,b lymphat
Xylene (o-,m-, and p-)	100	7/9/9	285	insol	3.8/3.7/ 3.7	0.87	63/84/ 81 UEL=7.0%	-12/-54/ 56 LEL=1.0%	b,c,d	i,j,k,h	a,e,f,h,i,m, n,q,s	a,b,c,e, g,h,i

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Physical Hazards

The physical hazards associated with this site include field activities, proximity to the operation of heavy equipment, and the suspension of dust and possible asbestos particles in the ambient air. Special hazards are present due to the fact that this is an old mill structure with unknown disconnected and buried water, gas, and electrical lines. Possible dangers exist from hearing impairment and communication difficulties due to heavy equipment noise, equipment movement and operation, and falling objects. An effective method of communication should be established prior to commencement of the activities. Caution should be observed as to physical placement of personnel during heavy equipment operation. All clothing should be reasonably close fitting with no loose or hanging pieces.

Heat Stress Illnesses. The potential for heat stress is a concern when field activities are performed on warm, sunny days, and is accentuated when chemical protective clothing and equipment is worn. Heat stress prevention measures will be implemented if site temperatures are above 70° Fahrenheit.

Precautions to prevent heat stress will include work/rest cycles, so that rest periods are taken before excessive fatigue occurs, and regular intake of water to replace that lost from sweating.

Heat stress due to water loss can be prevented by drinking water, at regular intervals. An adequate supply of potable water and drinking cups will be readily available.

If not prevented, heat stress results in illness. Two critical, heat stress related illnesses, heat exhaustion and heat stroke, can be life threatening, if not recognized and treated immediately.

An initial work/rest cycle of 1 hour to 10 minutes is recommended for protection of field personnel, when heat stress hazard is high. Prior to commencing work, and during each rest period, field personnel should drink at least 16 ounces of water. The recommended work/rest cycle will be adjusted based upon environmental conditions, and the judgement of the Site Safety Supervisor (SSS)/Site Safety Officer (SSO).

Heat Exhaustion. The signs and symptoms of heat exhaustion are headache, dizziness, nausea, weakness, fainting, profuse sweating, loss of appetite, dilated pupils, weak and rapid pulse, shallow and rapid breathing, possible cramps in abdomen and extremities, possible vomiting, difficulty walking, cool and sweaty skin to the touch, pale ashen gray coloring.

First aid for heat exhaustion is as follows:

- Remove victim to the decontamination area.
- Decontaminate, if practical, before entering decontamination area.
- Start cooling slowly. Be careful not to cause a chill (rest in shade and apply wet towel to forehead, and/or remove clothing as much as practical).
- Drink cool water slowly, but only if conscious and not in shock.

- If vomiting, and/or the signs and symptoms are not lessening within an hour, contact emergency help and/or transport the victim to the hospital.

Heat Stroke. The signs and symptoms of heat stroke are hot, dry skin to the touch; reddish coloring; body temperature greater than 105° Fahrenheit; no sweating; mental confusion; deep, rapid breathing that progresses to shallow, weak breathing; headache; dizziness; nausea; vomiting; weakness; dry mouth; convulsions; muscular twitching; sudden collapse; unconsciousness.

First aid for heat stroke is as follows:

- Immediately remove victim to an uncontaminated zone.
- Cool victim rapidly using whatever means are available, including: shade, opening up and/or removing clothing, soaking clothing/skin with water and fanning, placing victim in vehicle using air conditioner.
- Do not give drinking water to the victim.
- Treat for shock, if needed.
- Transport victim to the emergency room or call for emergency help.

Sunburn. Working outdoors for extended periods of time can cause sunburn to the skin. A sunburn may cause discomfort during subsequent fieldwork or during the use of Personal Protective Equipment (PPE). Excessive exposure to sunlight is associated with the development of skin cancer. Field personnel should take precautions to prevent sunburn, by using sun-screen lotion and/or wearing hats and long-sleeved garments.

3.0 MONITORING PLAN

On site air and personnel monitoring shall be conducted, as required by Federal or State health and safety regulations, or if conditions indicate. On-site air and personnel monitoring shall also be conducted at the start of each new activity, to characterize the type and degree of chemical exposure from each of the suspected major contaminants for each specific operation, and to determine site control areas, see Table 2.

At a minimum, monitoring will be performed in the breathing zones of the work area. Additional monitoring may occur. At this site, a Organic Vapor Analyzer (OVA) shall be used to monitor the air and soil for possible exposure to toxic materials such as volatile organics, on a daily and periodic basis. Test results will be documented. Monitoring will be conducted and documented by the SSS/SSO or designate.

APPENDIX O

TABLE 2.

PARAMETER	LOCATION AND INTERVAL	RESPONSE LEVEL	RESPONSE
Hydrocarbons (Total by FID or PID)	Breathing zone, every 15 minutes during intrusive work or contaminated soil handling	< 10 ppm	Continue Level D/D modified work and continue monitoring
Hydrocarbons (Total by FID or PID)	Breathing zone, every 15 minutes during intrusive work or contaminated soil handling	10 - 15 ppm above background	Monitor for benzene in the breathing zone. Continue work in Level D/D modified unlessbenzene is indicated.
Hydrocarbons (Total by FID or PID)	Breathing zone, every 15 minutes during intrusive work or contaminated soil handling	15 - 50 ppm above background	Contact SSO upgrade PPE to Level C, organic vapor cartridge
Hydrocarbons (Total by FID or PID)	Breathing zone, every 15 minutes during intrusive work or contaminated soil handling	> 50 ppm	Cease work, exit, and contact SSO
Benzene (Drager 81-01231 Benzene 2/a)	Breathing Zone, every 30 minutes as indicated by hydrocarbon monitoring	No color Change noted	Continue Level D/D modified work and continue monitoring
Benzene (Drager 81-01231 Benzene 2/a)	Breathing Zone, every 30 minutes as indicated by hydrocarbon monitoring	Color change noted	Contact SSO, upgrade PPE to Level C, organic vapor cartridge

4.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Level of Protection: A_____ B_____ C_X_ D_X_

Level C (Modified)

- Full face or half face respirator equipped with NIOSH approved organic vapor cartridges, and dust and mist filters.
- Chemically resistant boots
- Chemically resistant gloves (latex or nitrile)

- Chemical splash goggles (if a half face respirator is used)
- Hard Hat

Level D

- Chemically resistant boots
- Chemically resistant gloves (latex or nitrile)
- Chemical splash goggles
- Hard hat

At a OVA organic vapor detection of 10 ppm or above, and at any detection of benzene, respirators and other associated Level C PPE will be donned. Respirators will be removed when in areas where it is determined to be safe by the SSS/SSO or acting representative. Additionally, as a general rule, respirators will be donned when any vapors are nasally detected.

Respirators will be used if indicated by site conditions to minimize volatile and ambient air organic chemical exposure by inhalation, and in the case of full face respirators to minimize exposure to the eyes. A full face respirator provides a higher level of respiratory protection, as well as preventing vapor contact with the eyes. Organic vapor/acid cartridges will be used, and new cartridges will be installed daily at a minimum, or as exposure and hours of use indicate. To prevent exposure to particulates (dust, mists, or fumes), and to extend the usability of the organic vapor cartridges, dust and mist filters will be used if indicated by site conditions. Respirators, cartridges, and filters will be NIOSH approved.

Boots, protective clothing, and gloves prevent direct contact with potential contaminants in the soil, water and ambient air, and provide an easy method of personal decontamination. Splash goggles provide protection from possible liquid splashing in the eyes, and in the case of sealed goggles, limit the contact of the ambient air with the eyes.

All monitoring personnel and subcontractors will meet the minimum level of PPE when entering or working in an area of known contamination specific to the job task. If the level of contamination is unknown, the maximum level of PPE will be donned prior to entering the suspected contamination zone. Once appropriate site monitoring has been conducted to indicate the level of contamination, the level of PPE may be reduced, as appropriate. If known or suspected conditions require an increase in the level of PPE in the contamination zones or newly designated contamination zones, all operations will immediately cease until appropriate changes in PPE are made.

5.0 SITE CONTROL

Whenever feasible, personnel, equipment, and decontamination station placement shall be upwind of any suspected source of contamination. During site activities, the area will be divided into three basic areas: a contamination zone, a contamination reduction zone, and an uncontaminated zone. The uncontaminated zone will be the area(s) of the project that can be documented as not indicating any detectable levels of contamination by the selected methods of site monitoring presented in this SSP. At this project site, the contamination reduction zone and uncontaminated zone may be the same, but must be determined based on the site monitoring program.

No person shall be allowed in an area designated as a contamination zone, or a contamination reduction zone (that is not also a uncontaminated zone) unless authorized by the SSS/SSO or acting representative. Persons entering areas other than uncontaminated zones must comply with the PPE provisions of this plan and currently satisfy all the requirements specified in 29 CFR 1910.120.

The SSS/SSO or acting representative may and will cease operations if the site control portions of this SSP are not followed.

6.0 DECONTAMINATION PROCEDURES

Decontamination Areas

Decontamination areas will be established prior to the commencement of site operations in contamination reduction zones or uncontaminated zones. Decontamination areas may be reestablished in response to changes in environmental conditions and site activities by the SSS/SSO or representative.

Equipment Decontamination

All sampling equipment will be appropriately decontaminated between each sampling event and before leaving the site. All non-disposal PPE will be appropriately decontaminated before leaving the site. Wash rinseate will be placed in a container and, subsequent to sample collection, will be properly disposed. Used, disposable PPE will be contained in a separate container and held until test results are reviewed. It is anticipated that, for this project, normal disposal will be suitable for disposable PPE. If soil test results indicate site contamination at levels designated as hazardous waste by State or Federal regulations, the disposable clothing will be tested to determine the appropriate method of disposal.

Decontamination of personnel will be accomplished by removing contaminated clothing and gear, washing exposed skin with a solution of deionized water and liquinox, and rinsing with deionized water.

Emergency Decontamination

The decision whether or not to decontaminate a victim is based on the type and severity of the illness or injury and the nature of the contaminant. For some emergency victims, immediate decontamination may be an essential part of life-saving first aid. For others, decontamination may aggravate the injury or delay life-saving treatment. If decontamination does not interfere with essential treatment, it should be performed.

- **If decontamination can be done:**

  Wash, rinse, and/or cut off protective clothing and equipment.

- **If decontamination cannot be done:**

  Wrap the victim in blankets, plastic, or rubber to reduce contamination of other personnel. Alert emergency and off site medical personnel to potential contamination; instruct them about specific decontamination procedures if necessary. Send along site personnel familiar with the incident.

  If immediate medical treatment is required to save a life, decontamination should be delayed until the victim is stabilized. If decontamination can be performed without interfering with essential life-saving techniques or first aid, or if a worker has been contaminated with an extremely toxic or corrosive material that could cause severe injury or loss of life, decontamination must be performed immediately. If an emergency due to a heat-related illness develops, protective clothing should be removed from the victim as soon as possible to reduce the heat stress.

7.0 GENERAL SAFETY REQUIREMENTS

The following general safety procedures shall be followed by all persons entering and/or working in the immediate area of project activities:

1. All personnel involved with these activities shall be aware of the location of buried utilities. USA Underground Alert shall be notified, if required, at least 48 hours in advance of sampling and will mark and locate any underground utilities located within or immediately adjacent to the work area.

2. No personnel will be allowed on site without the prior knowledge and consent of the SSS/SSO.

3. There will be no field activities conducted without sufficient backup personnel. At a minimum, two persons who currently satisfy the health and safety requirements specified in 29 CFR 1910.120 (e) must be present at the site while field activities are in progress.

4. All personnel involved with the project shall bring to the attention of the SSS/SSO or project representative any unsafe condition or practice associated with site activities.

5. Team members must avoid unnecessary contamination (such as, walking through known or suspected "hot" zones or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated equipment).

6. Respiratory devices may not be worn with beards, or under other conditions that prevent a proper seal.

7. Respiratory devices may not be worn with contact lenses.

8. No deep test pit entry (more than 5 feet in depth) will be allowed without installation of trench shoring, or other approved means of excavation security designed and installed in conformance with current Cal OSHA/OSHA regulations.

9. Smoking will only be allowed in designated areas.

10. Hard hats will be worn within 10 feet of the operation of any heavy equipment.

11. Proper hearing protection will be worn at all times in conformance with current Cal OSHA/OSHA regulations.

12. Proper eye protection will be worn to protect the eye area from liquid splashes or flying debris.

8.0 EMERGENCY RESPONSE PLAN

The SSS/SSO or designate shall be immediately notified of any injury or accident occurring at this site.

The following is a list of emergency telephone numbers if an injury requires off site medical aid.

EMERGENCY RESPONSE CONTACTS

EMERGENCY MEDICAL FACILITIES:	911
HOSPITAL	Telephone No.
Mad River Hospital 3800 Janes Road Acrata, CA 95521	(707) 822-3631
AMBULANCE	911
FIRE DEPARTMENT	911
POLICE DEPT	911
POISON CONTROL HOTLINE	(800) 523-2222

In the event of an emergency, the following agencies and persons shall be appropriately notified immediately following the necessary emergency response contacts:

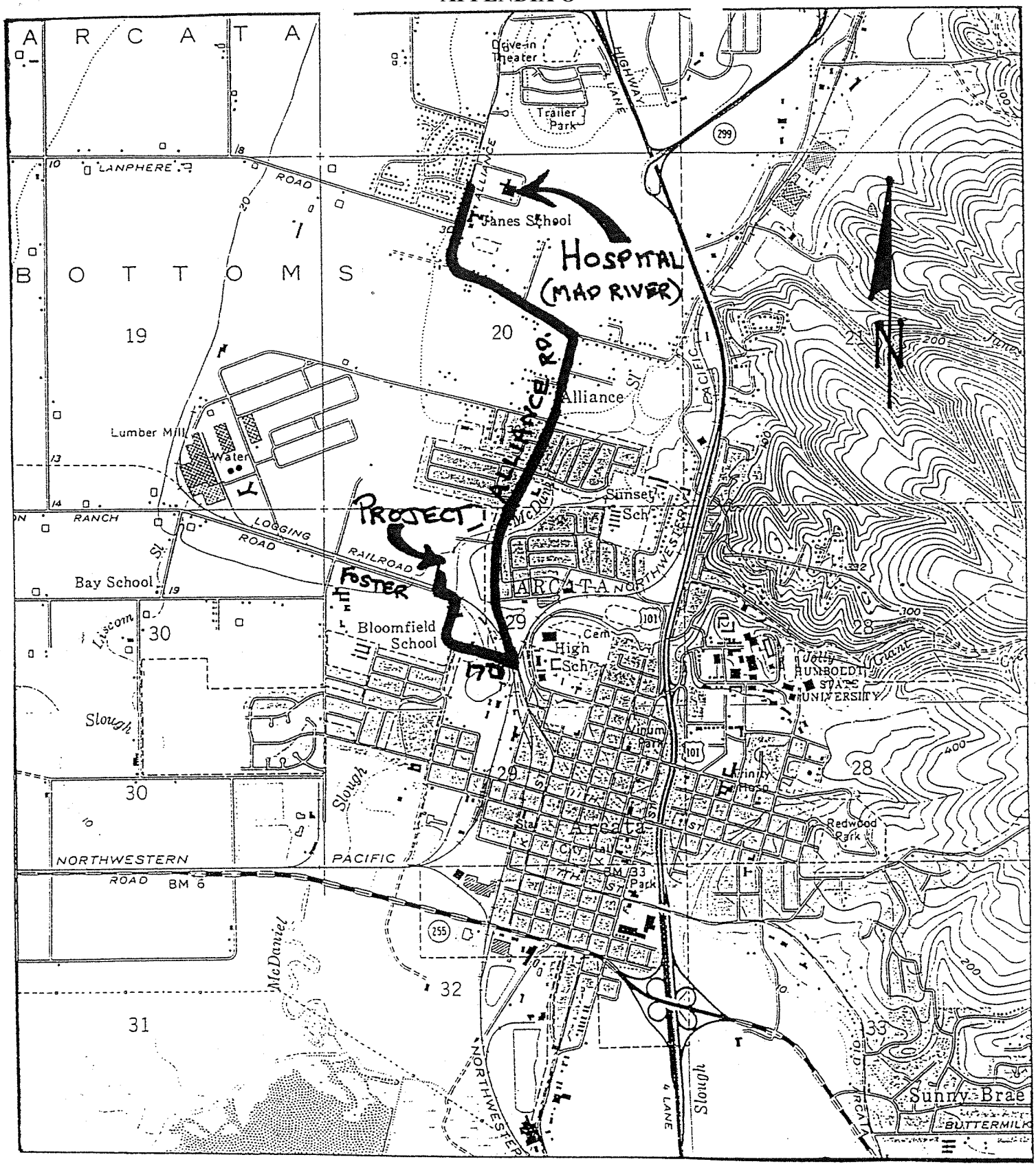
GENERAL CONTACTS

GOVERNMENT CONTACTS

In the event of an unauthorized release of a potentially hazardous materials, the following agencies will be notified.

	Telephone No.
California Regional Water Quality Control Board, North Coast Region	(707) 576-2220
State Office of Emergency Services	(800) 852-7550
Humboldt County Environmental Health Dept.	(707) 445-6215

APPENDIX O



HOSPITAL LOCATION MAP

SHN

9.0 DOCUMENTATION

Documentation of employee medical surveillance, training, and respirator fit test records is maintained at_____, with copies provided to each employee. Subcontractors are responsible to maintain their own records.

EMPLOYEE TRAINING

All personnel who work at hazardous sites shall have received the required OSHA 40-hour hazardous site operations training and annual 8-hour recertifications as specified by CFR Title 29 §1910.120.

MEDICAL SURVEILLANCE

All employees are required to undergo a complete physical examination prior to initial assignment at a hazardous site. Comprehensive physical exams shall provide not only baseline health and monitoring information, but shall provide a level of assurance that the employee is capable of wearing the required protective equipment and performing the sometimes strenuous work.

ON SITE DOCUMENTATION

Compliance with the Site Safety Plan will be documented by execution of a sign-off sheet during the site safety briefing(s) and a daily record. By signing these sheets, persons to be involved in the project field activities acknowledge willingness to comply with this SSP throughout the period of the current field activities. Safety meetings will be scheduled at the beginning of field operations, and will be held at the start of each day. Field monitoring results will be recorded and retained on site or in the _____ files.

HAZARDOUS MATERIALS SITE OPERATIONS
SITE SAFETY MEETING ATTENDANCE
SHN CONSULTING ENGINEERS & GEOLOGISTS

JOB NAME		ACTIVITY		JOB #		
GIVEN BY:		SIGNATURE		DATE		TIME
Company/ Agency	Name	Operation/ Function	Signature	Read SSP Y/N	29CFR1910.120(e) 40hr Y/N	24hr Y/N

APPENDIX O

HAZARDOUS MATERIALS SITE OPERATIONS
DAILY RECORD
SHN CONSULTING ENGINEERS & GEOLOGISTS

JOB NAME		ACTIVITY				JOB #		
Company/ Agency	Name	Operation/ Function	Signature	Time In	Time Out	Date	29CFR1910.120(e) 40hr Y/N	24hr Y/N

APPENDIX O