

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL & HAZARDOUS MATERIALS REPORT

Spill Number: P-534-2011

Report Status: Final Report

MCD Town: LEWISTON
Local Name: LEWISTON
Primary Responder: STEPHEN G BREZINSKI
Primary Product: #6 Fuel Oil {06} UNKNOWN
Subject/Owner: COLUMBIA MILL (FORMER) - -

I. EVENT

Spill Info

Type Oil Incident {O}
Source No Source Found By Responder {NS}
Cause Other - Unknown {18}

Spill Date/Time

Date and Time Unknown

Reporter Type/Detection Method

Type Public Official {4}
Method Visual Product {L}

Reported Date/Time

07/12/2011 11:00

Subject/Spiller (Potential Responsible Party)

Contact --COLUMBIA MILL (FORMER)
MILL STREET
LEWISTON ME 04240 USA

Comment FORMER MILL LOCATION, NOW OWNED BY CITY OF LEWISTON

Reporter

Contact JOHN CRESSEY--SUMMIT ENVIRONMENTAL
640 MAIN ST
LEWISTON ME 04240 USA
207-795-6009

Comment

Reporter

Contact DAVID JONES-PUBLIC WORKS DIRECTOR-CITY OF LEWISTON

LEWISTON ME 04240 USA
207-513-3070

Comment

Other Contact (Potential Responsible Party)

Contact --CITY OF LEWISTON
27 PINE ST
LEWISTON ME 04240 USA
207-513-3014

Comment property owners at this time

Primary Responder and Other Employees

STEPHEN G BREZINSKI (Primary Responder)
MARK R WOODRUFF
BRIAN A BENESKI

II. SITE

Location

Location Type Business - Industrial {ID}
Name COLUMBIA MILL (HERITAGE PARK)
Street Address 3 MILL ST @ ANDROSCOGGIN RIVER
MCD Town LEWISTON
Local Name LEWISTON
State/Province ME

Spill Point

UTM North 4,883,520.230000
UTM East 402,263.480000

Wells and Media Affected

Wells Affected 0 Wells Impacted / 0 Wells At Risk
Media Affected Land{L}
Inland Surface Water{I}
Groundwater{G}

Tanks Involved

Unknown/Unspecified
Underground Tank(s) Involved-584 1

III. CLEANUP**Product Reported**

#6 Fuel Oil {06}

Cleanup DTREE**Products Found/Amount Spilled**

#6 Fuel Oil {06}/ UNKNOWN (Primary Product)

Material Recovered

Other Material {OM} - 1,000 lbs. ESTIMATE

Recovery/Treatment Method:

Sorbents {C}
Other {J}

Disposal Information

Waste sorbents handled by EPI.

IV. NARRATIVE

SUMMARY

This spill report covers the investigation and response clean-up actions to a seep of #6 heating oil discharging to the Androscoggin River. The discharge is on the former Columbia Mill property but was traced to a former Underground Storage Tank (UST) facility abandoned-by-removal in year 2000 and owned and operated by the W. S. Libbey Mill (see P-561-2011). The property is now owned by the city of Lewiston with hopes of remediation and redevelopment under an EPA Brownfields Program grant.

Stephen Brezinski was primary MDEP Response Division representative. Also involved were geologists Mark Woodruff and Troy Smith of MDEP Technical services, and Brian Beneski of MDEP Brownfields Program. The Lewiston city contacts were Lincoln Jeffers of Economic & Community Development and Dave Jones of Public Works Department (PWD), with consultant John Cressey of Summit Environmental.

Multiple MDEP spill report numbers were assigned as initially it was unknown which of four distinct sources and properties the discharge originated at. As of 12/5/11, further work and expenses for 2011 will be under report number P-561-2011.

INITIAL NOTIFICATION

7/12/11: Maine Department of Environmental Protection (MDEP) was notified by Dave Jones of a discharge of an unknown volume of an unknown oil to the Androscoggin River upriver of their Main St. pump station. John Cressey of Summit Environmental soon after reported the same discharge; Cressey was in the area performing an assessment of an UST abandonment-by-removal (see P-537-2011).

Onsite, upon confirming the discharge I notified the USCG National Response Center, who notified the US Environmental Protection Agency (EPA), and I notified MDEP supervisors.

This report is meant to describe investigation and initial clean-up actions by MDEP Response Services Division and not to be a Phase-2 Environmental Site Assessment (ESA).

INITIAL DISCHARGE ASSESSMENT

Tuesday, 7/12/11: On-site approximately 1515 hours, I met Cressey and Jones at Lewiston's Heritage Park, location of the former Columbia Mill buildings. Out of the granite block retaining wall at the NW end (see photos and site sketch) we observed a heavy petroleum sheen in the water, a black oil bathtub-ring like oil smear on the wall approximately 12" to 18" above the river level. The river level was observed to fluctuate daily which is why the smearing occurred. On the water I noted droplets of black free product oil which had the odor, appearance and sticky feel of #6 heating oil (not waste motor oil for example). Laboratory analysis later confirmed it to be #6 heating oil.

The oil was held in the cove here, historically known as the "Cowan Pond" area, by the river currents, so the oil discharge had not escaped this still area. A person in the park told me that this oil had not been there the week before. The oil on the wall, beach and rocks appeared fresh, perhaps several weeks old at most based on my experience with #6 oil. In the spill area there was an old, partially bricked over penstock for the former mill and a 15" clap pipe that looked to be possible discharge outlets. Later we observed significant oil droplets seeping with groundwater out through joints in the blocks south of the drain pipe and penstock. I noted no oiled wildlife at the time.

From mid-July to mid-August 2011 the volume of oil discharging to the river did not decrease, but increased at times of heavy water draining through the soil indicating a consistent, chronic source of black oil leaching out of the retaining wall and not a one-time leak or discharge. During Autumn heavy rain and river level rising three to eight feet the oil seep ceased as we believe the pressure of the river water regarded the groundwater kept the oil from leaching out.

Present and the past Decision Tree clean-up requirements required remediation of oil saturated soil and of free product discharges at minimum. As this area is anticipated to go through Brownfields Program

redevelopment and MDEP VRAP clearance (see records of Brian Beneski, et al), a more stringent clean-up guideline/requirement may be required.

INITIAL CLEAN-UP ACTIONS

7/12/11: As no responsible party was initially clear, as a MDEP responder I authorized Environmental Projects Inc. (EPI) to respond with oil sorbents and booms. I kept Mr. Cressey informed as he was also representing the city of Lewiston who was the property owner, and I received okay from MDEP supervisors to hot-wash the oil off the wall and rocks the following day.

Wednesday 7/13/11: I worked with EPI who power washed the retaining wall and collected the oil with sorbents. A 2 foot diameter steel fuel pipe above and near the discharge area was noted as a possible spill source (P-561-2011), uncapped and approximately 18 gallons of black oil was drained out with a vacuum truck; this piping was associated with a 12,000-gallon #6 oil UST that had been abandoned-by-removal in March 2000 (UST registration #584).

7/14/11, 7/15/11 and 7/18/11: MDEP and EPI changed pads. MDEP authorized EPI to return weekly or as requested to change sorbents. Over weeks the retaining wall again became coated with black oil indicating a continuing slow discharge.

There was no oil-contaminated soil or groundwater treated or disposed of under this spill number, see P-561-2011.

SOURCE INVESTIGATION

Following site walkover, review of Phase-1 and Phase-2 assessments, discussions with consultants from Summit and from Drumlin Environmental, the MDEP noted and considered five potential realistic sources for the then mystery #6 oil discharge to the river. Unless there was a source directly next to the river we surmised that oil discharge was traveling from a source (UST, buried drums, buried surface discharge, etc.) to the river via a long forgotten drain pipe, on groundwater through the soil or through bedrock fractured.

1) There was a 12,000-gallon capacity, bare steel, non-compliant, #6 oil UST formerly located just 75 feet west and above the discharge area for the former Libbey Mill complex (and former Lincoln Mill) that burned down about 1992 (UST reg. #584 and MDEP spill report P-561-2011). This UST has piping going up Mill St. to the northeast end of the former Libbey building. A July 2000 UST closure assessment did identify soil cemented together by oil (oil-saturated soil) less than two feet thick. This discharge was reported to Sheryl Bernard of MDEP, a Baseline-1 clean-up assigned and no clean-up requested and no spill report apparently written. The product pipe to the Libbey Mill's boiler room had not been sufficiently drained in 2000 so oil seeped out it's cap until 18 gallons of #6 oil was drained out on 7/13/11. Test pits TP-8 and TP-9 dug on 8/11/11, confirmed oil-saturated soil remaining in this UST location but not how it might be reaching the river.

2) A second potential source was a 5,000-gallon bare-steel, out-of-compliance UST (reg. # 21701) removed under Summit Env. on 7/12/11 at the former Cowan Mill which had burned down in 2009 about the time the discharge to the river was found (see MDEP report P-537-2011). This UST was assessed to have been a #2 oil UST so was ruled out at the time.

3) We identified an abandoned-in-place, three-compartment, non-compliant, 147,000-gallon #6 oil UST (UST reg. 21727) located upgrade at Central Maine Power's (CMP's) Lewiston Steam Plant Substation, a former power plant now transformer substation (see report P-541-2011). On the retaining wall below the CMP site and Mill St. we noted old #6 oil spillage on the wall and from a 15" clay drain pipe coming from this UST location. Test pits dug on 8/1/11, just outside the tank, confirmed free product leaks and black oil-saturated soil prohibited discharges associated with this tank. The conundrum was how the oil discharge from this UST was reaching the river 330 feet away to the west.

4) A 1957 Sanborn Map shows two "oil tanks" located just below the Mill Street retaining wall, that appear to

be associated with the former Columbia Mill but Cressey told me he believes this area was associated with the former Libbey Mill. These "oil tanks" may have been replaced by the adjacent 12,000-gallon UST registration #584. Test pits TP-5 and TP-6 exposed #6 oil saturated soil and free product on groundwater in this location. This oil discharge may have derived from the CMP UST since the CMP tank is directly upgrate.

5) Cressey stated that Columbia Mill used coal was a fuel until it burned down in 1972 and we noted no evidence the mill had significant oil storage but there was little historical information I found. Test pits on 8/11/11, around the east and north and within the penstock chamber where the oil was discharging confirmed no oil in the soil, on groundwater and bedrock. No test pit was excavated on the south side or up to the retaining wall for fear of damaging the 20" high wall, but now ruling out the other sides of the penstock it appears that the south side of the penstock chamber appeared to be the source or travel route to the river.

On 8/17/11 four samples collected by S Brezinski from the UST product line, the oiled debris on the river, CMP's UST discharge, and from TP-6 were sent to the USCG Marine Safety Lab for fingerprint comparison. The oil in all samples was confirmed to be #6 heating oil (not waste oil, etc.) but the samples were unrelated and the differences could not be attributed to weathering. No PCBs were found in sample analysis.

CONCLUSIONS & RECOMMENDATIONS

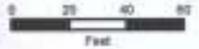
- 1) Soil borings and test pits done in the autumn of 2011 showed a narrow plume of free product and oil-saturated soil coming from the Libbey Mill UST and going west to the oil seep near the Columbia Mill penstock. This investigation and associated clean-up actions are described in P-561-2011 and reports by MDEP Technical Services. Summit Env. and Drumlin Env. may also be completing assessment reports.
- 2) No firm evidence of significant volumes of oil contamination was shown to be coming down into the Columbia Mill property from under Mill Street from the CMP UST facility.
- 3) At this time the City of Lewiston has been determined to be primary responsible party for the discharge and clean-up to state satisfaction. Lewiston is the present owner of the former W. S. Libbey Mill and Columbia Mill properties.
- 4) The UST Closure Assessment for the Libbey Mill UST abandoned in 2000 apparently did not identify the severity of 6 oil saturated soil and free product on the groundwater.
- 5) This spill report shall not be considered or used as an environmental site assessment nor to indicate that the site is cleaned to original or pristine conditions. At this time the discharge is not clean to state satisfaction and details can be found in additional spill reports listed previously.

S Brezinski
MDEP, BRWM

V. ATTACHMENTS

<u>Attachment Type</u>	<u>Description</u>	<u>File Name</u>
Paper Attach	MDEP photos	
Paper Attach	Response Spill maps (2)	
Paper Attach	NRC Incident Report 982475	
Electronic Form	Expense Tracking	
Paper Attach	Photo log 2	
Paper Attach	Test Boring Data	

Response Spill Map



1 inch = 66.67 feet



P-534-11
1 of 2

- Response_Spill_Points
- AST Tank
- JST Tank
- Tank_BRWM
- Sample_Location_BRV
- roads_E911
- Public Drinking Water S
- Public Drinking Water S
- Public Drinking Water 1
- Public Drinking Water 2
- Public Drinking W
- sand and gravel aquifer
- Sand and gravel aquifer
- Bedrock-MODERATE p
- Bedrock-HIGH probabili



PEN-STOCK 12 INCH CAST IRON PIPE

#6 OIL SLEEP

SHED

B-1 (Summit)

TP-2

TP-3

BR-1

TB-9

TB-8

TB-14

TB-4

TB-6

TB-5

TB-7

TB-3

TB-10

TB-13

TB-11

TB-12

TB-15

TB-17

TB-18

TB-19

TB-20

TB-21

TB-16

TB-24

TB-23

FOUNDATION (GPR)

BOILER ROOM

TP-9

TP-8

TB-22

TP-5

TP-6A

TP-6B

BK-SS-03

BK-SS-02

BK-SS-01

OIL TANKS

W

UNDERGROUND ELECTRIC

6 INCH CAST IRON PIPE

B-2 (Summit)

COLUMBIA MILL MAIN BUILDING

B-4 (Summit)

COLUMBIA MILL

NATIONAL RESPONSE CENTER 1-800-424-8802

GOVERNMENT USE ONLYGOVERNMENT USE ONLY***

Information released to a third party shall comply with any applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 982475

INCIDENT DESCRIPTION

FAXED

*Report taken by: MST1 RICHARD LAYMAN at 16:15 on 12-JUL-11
Incident Type: UNKNOWN SHEEN
Incident Cause: UNKNOWN
Affected Area: ANDROSCOGGIN RIVER
Incident was discovered on 12-JUL-11 at 11:00 local incident time.
Affected Medium: WATER DIRT/ BRICK RIP RAP/ STONE WALL

REPORTING PARTY

Name: STEPHEN BREZINSKI
Organization: MAINE-DEP
Address: 312 CANCO RD
PORTLAND, ME

PRIMARY Phone: (207)4469882 ALTERNATE Phone: (207)8226300
Type of Organization: FEDERAL GOVERNMENT

SUSPECTED RESPONSIBLE PARTY

Name: UNKNOWN

XX

INCIDENT LOCATION

ANDROSCOGGIN RIVER County: ANDROSCOGGIN
NEAR FOREMER COWEN MILL
City: LEWISTOWN State: ME
UNKNOWN SHEEN INCIDENT

RELEASED MATERIAL(S)

CHRIS Code: OUN Official Material Name: UNKNOWN OIL
Also Known As:
Qty Released: 0 UNKNOWN AMOUNT Qty in Water: 0 UNKNOWN AMOUNT

DESCRIPTION OF INCIDENT

THE CALLER REPORTED THAT A BLACK OIL RING ON THE SHORE LINE AS WELL AS AN OIL SLICK AND SHEEN ON THE ANDROSCOGGIN RIVER. THE SOURCE WAS UNKNOWN.
THE MATERIAL WAS POSSIBLY NO. 4 OIL.

SENSITIVE INFORMATION

INCIDENT DETAILS

Platform Rig Name:
Platform Letter:
Location Area ID:
Location Block ID:
OCSG Number:
OCSP Number:
State Lease Number:
Pier Dock Number:
Berth Slip Number:

RECEIVED DEP-SMRC
2011 JUL 13 AM 7:59

---SHEEN INFORMATION---

Sheen Color: DARK BLACK
 Sheen Odor Description:
 Sheen Travel Direction:
 Sheen Size Length: 15 FEET
 Sheen Size Width: 1 FEET

---WATER INFORMATION---

Body of Water: ANDROSCOGGIN RIVER
 Tributary of:
 Nearest River Mile Marker:
 Water Supply Contaminated: UNKNOWN

IMPACT

Fire Involved: NO Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger:
 FATALITIES: NO Empl/Crew: Passenger: Occupant:
 EVACUATIONS: NO Who Evacuated: Radius/Area:

Damages: NO

Closure Type	Description of Closure	Hours Closed	Direction of Closure
Air:	N		
Road:	N		Major Artery: N
Waterway:	N		
Track:	N		

Environmental Impact: UNKNOWN
 Media Interest: NONE Community Impact due to Material:

REMEDIAL ACTIONS

CLEAN UP CREW IS ON SITE/ PRESSURE WASH THE AREA
 Release Secured: UNKNOWN
 Release Rate:
 Estimated Release Duration:

WEATHER

Weather: PARTLY CLOUDY, ||F

ADDITIONAL AGENCIES NOTIFIED

Federal: NONE
 State/Local: CITY/ ME DEP
 State/Local On Scene: NONE
 State Agency Number: NONE

NOTIFICATIONS BY NRC

DHS NOC (NOC)
 12-JUL-11 16:23 (202)2028114
 USCG ICC (ICC ONI)
 12-JUL-11 16:23 (301)6693363
 DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
 12-JUL-11 16:23 (202)3661863
 EPA CRIMINAL INVESTIGATION DIVISION (EPA CRIMINAL INVESTIGATION DIV REG
 12-JUL-11 16:23 (617)9182310
 U. S. EPA I (MAIN OFFICE)
 (617)7238928
 MAINE INFO AND ANALYSIS CENTER (FUSION CENTER)
 12-JUL-11 16:23 (207)6247280

NH U. S. ATTORNEY'S OFFICE (MAIN OFFICE)
 12-JUL-11 16:23 (603)5209817
 NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
 12-JUL-11 16:23 (202)2829201
 NOAA RPTS FOR ME (MAIN OFFICE)
 12-JUL-11 18:23 (206)5264911
 ME DEP (MAIN OFFICE)
 12-JUL-11 16:23 (207)2872651
 ME EMGCY MGMT AGCY (MAIN OFFICE)
 12-JUL-11 16:23 (207)6244400
 USCG DISTRICT 1 (COMMAND CENTER)
 12-JUL-11 16:23 (617)2238555

ADDITIONAL INFORMATION

THE CALLER STATED THERE IS AN ADDITIONAL RAINBOW SHEEN 100 FT LONG.

*** END INCIDENT REPORT #982475 ***

Report any problems by calling 1-800-424-8802
PLEASE VISIT OUR WEB SITE AT <http://www.nrc.uscg.mil>

8/24/11 Wed.

- ① Onsite 1630 hrs. wx: sunny, warm.
- ② River level high, almost over 15" clay pipe. Much less oil in water, only moderate oil sheen.
- ③ I found all the sorbent pads taken out of water and on the beach/shore. On calling EPI Mick know not why or who did it. I put them back in water.
- ④ In morning I received USCG lab results indicating that no samples related.
- ⑤ Tim of EPI reported that less oil in water, pads changed.

P-534-11

Spill Expenditure Tracking Form

I. TO: SHERRIE M. EDWARDS FROM: STEPHEN G. BREZINSKI
 DATE: 8/22/2011 12:00:00AM SPILL REPORT NUMBER: P-534-2011
 TOWN WHERE SPILL OCCURRED: LEWISTON

Check one: FINAL INVOICE ADDENDUM X NEW

SUBJECT (check off below):

<input type="checkbox"/> Individual Ability to Pay (IAPP) Candidate	<input type="checkbox"/> AST/UST Fund Coverage Claim (approved)
<input type="checkbox"/> Potential AST/UST Fund Coverage --	<input checked="" type="checkbox"/> X Request Reimbursement
<input type="checkbox"/> Applicant (waiting for determination)	<input type="checkbox"/> Do not Requests Reimbursement (sttach memo with explanation)
<input type="checkbox"/> Mystery Spill	<input type="checkbox"/> R.P. to be Determined

II. NAME AND ADDRESS OF RESPONSIBLE PARTY:

CITY OF LEWISTON
27 PINE STREET
LEWSITON, ME 04240 USA
 Phone Number: 207 513-3014

III. TYPE OF PRODUCT SPILLED: #6 Fuel Oil

DATE OF SPILL: _____
 INVESTIGATOR: STEPHEN G. BREZINSKI

IV. ACCOUNT NUMBER(S):

Recommended: 014.06A.1546.342 SURFACE FUND - CLEAN-UP
 014.06A.1546.442 GROUNDWATER FUND - CLEAN-UP

Response to #6-oil discharge to Androscoggin River from historical UST facility. See also P-561-2011.
12/5/11: City of Lewiston, owners of Libbey Mill and Columbia Mill properties, determined to be Responsible Party (or Parties) for reimbursement. Contact: Lincoln Jeffers, Interim Director/Assitant to the Adminsitrator, Economic & Community Dev.

CONTRACT NUMBER: _____

V. Please list contractor/vendor name or DEP stock item, invoice number, and amount of invoices.

SUMMARY OF ITEMS/SERVICES	COST
CPRC Group [soil recycling]	
ENVIRONMENTAL PROJECTS INC. [excavation, test pits]	
ENVIRONMENTAL PROJECTS INC. [spill response & waste management]	\$7,767.30
NORTHERN TEST BORING [test borings, 11/7/11]	\$1,850.00
ENVIRONMENTAL PROJECTS INC. [boom maint, spill resp.]	\$885.00
ENVIRONMENTAL PROJECTS INC. (spill resp.)	\$487.50
MAINE ENV. LAB [soil analysis, fingerprinting 10/18/11]	\$456.00
ALLSTATE ENVIRONMENTAL (laying boom in river)	\$335.00
FED EX (shipping samples for analysis, USCG MSO)	\$36.37

TOTAL OF INVOICES/SERVICES

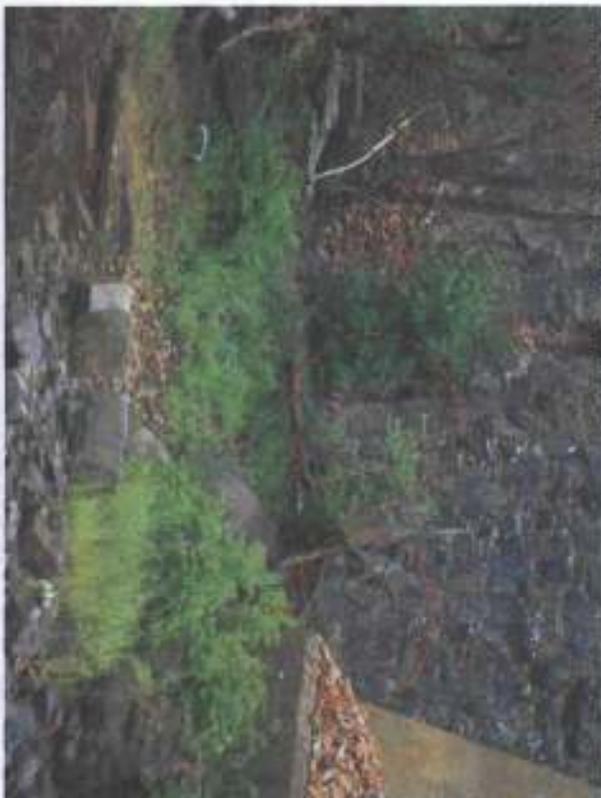
\$11,817.17



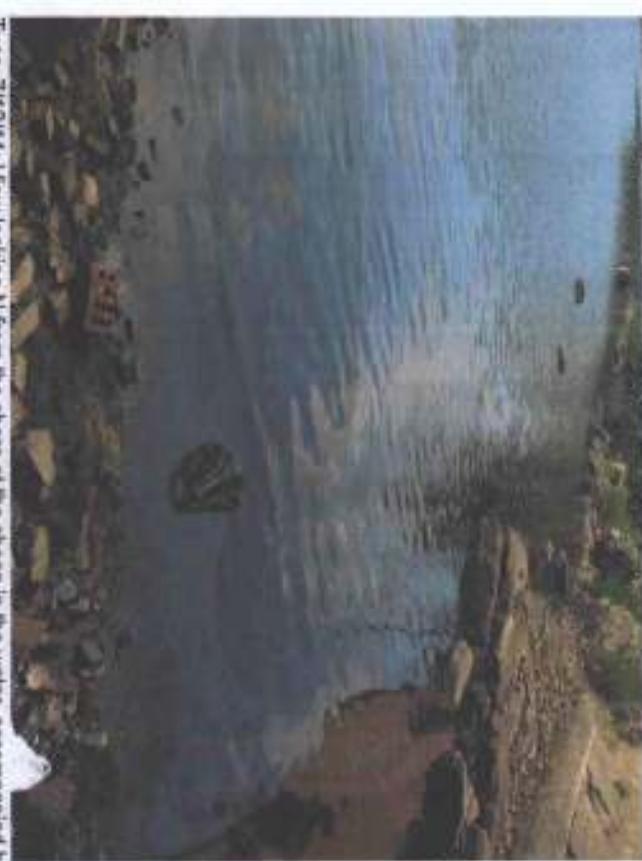
1. Tues, 7/12/11: During MDEP initial response looking down on the oil-sheen area below the retaining wall of the former Columbia Mill.



3. Tues, 7/12/11: the 1.5' high smear (bathtub ring) of black oil up the side of the retaining wall from fluctuating water level. A 15" clay drain outlet is at upper left.



2. 8/16/11 photo of the retaining wall below the former Cowan Mill to the north. Visible at the base of the wall are apparent old brocked-up penstock outlets visible in historical photos and similar to that at the oil seep from the Columbia Mill wall.



4. Tues, 7/12/11: View looking N from the shore at the sheen in the water, accompanied by blobs of free black oil.



5. Tues. 7/12/11: Close-up of the oil sheen in the water, understood to be from oil covering the rocks and from continuing discharge from the drain pipe.



6. Tues. 7/12/11: Oil sheen on the river water.



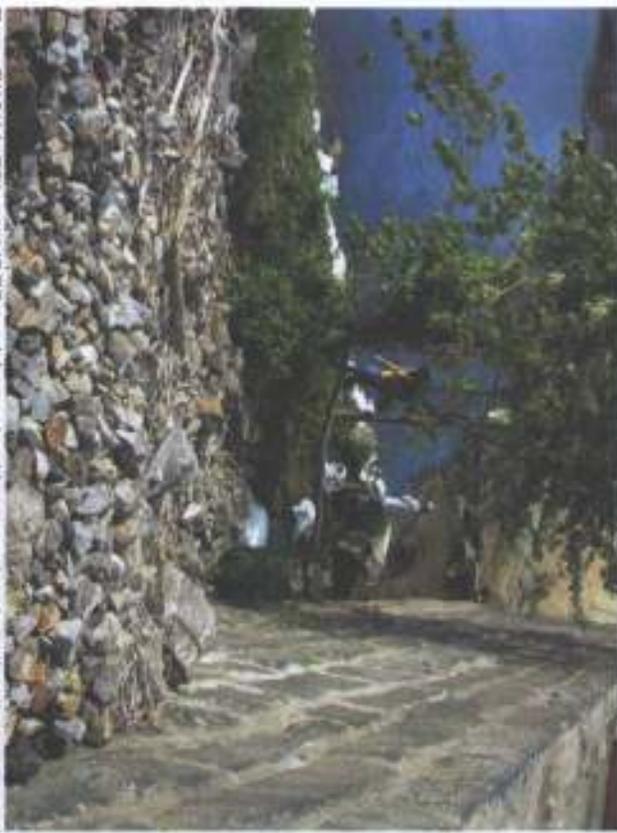
7. Wed. 7/13/11: From Mill Street, looking down at the Heritage Park (former Columbia Mill) parking lot at the incident location and MDEP and EPI vehicles. The arrow at upper right shows the location of the 2' product piping for the former 12,000-gal. Libbey Mill UST that EPI was sucking out (see photos 17 & 19 below).



8. Tues. 7/12/11: The red arrows show the large, partially bricked-up outlet and the smaller 15" drain pipe. This wall is part of the former Columbia Mill. At upper left is another old major perstock from the former Libbey Mill complex and the location of Cowan Pond in historical plans.



9. Tues. 7/12/11: Looking down at the oil sheen on the river 20' below the top of the wall.



10. Tues. 7/12/11: EPI and MDEP applying sorbent boom and pads to the discharge on the river, and wiping off oiled rocks. The retaining wall was part of the former Columbia Mill razed about 1972.



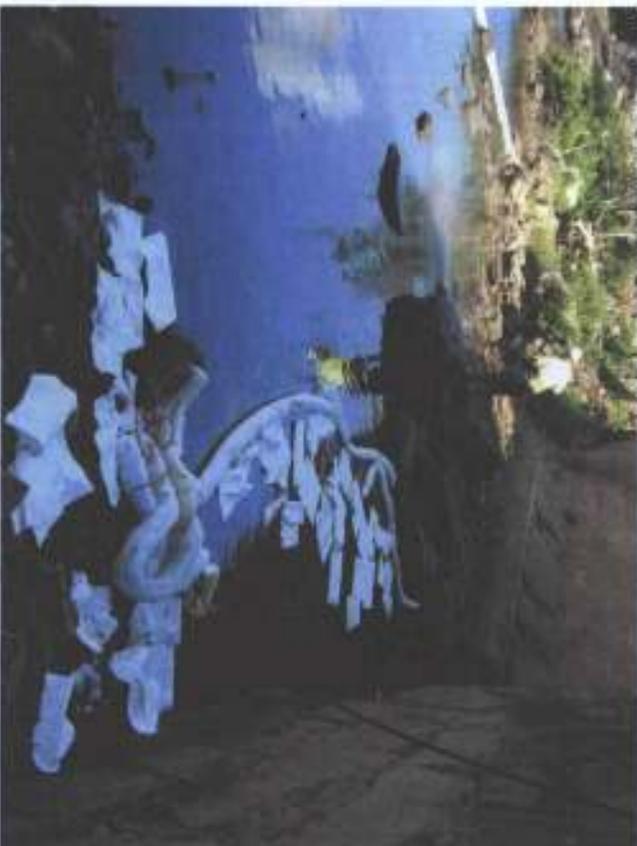
11. Wed. 7/13/11: Close up view of the oiled wall and rocks, and sample S-2 (in silver sample bag) of oil scraped off the rocks.



12. Wed. 7/13/11: Inside the 5' diameter large drain outfall from the former mill with oil-contaminated bricks lying in the water.



13. Wed, 7/13/11: Inside the 5' diameter large drain outfall from the former mill with oil-contaminated bricks lying in the water. Note the intact brick construction of the outfall. This chamber lies under FPL's red building.



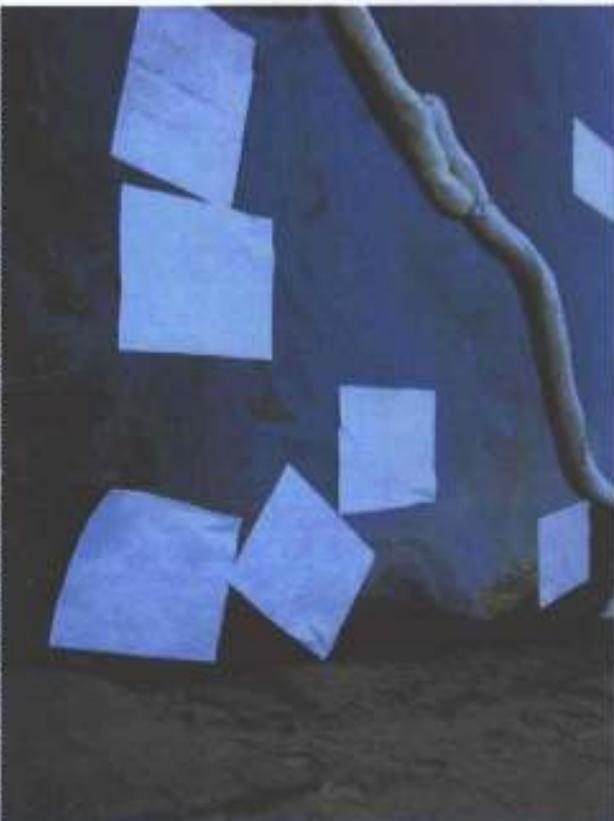
14. Wed, 7/13/11: EPI worker power hot-washing the rocks and retaining wall with the freed oil caught by the sorbent pads and boom.



15. Wed, 7/13/11: EPI worker power hot-washing the rocks and retaining wall with the freed oil caught by the sorbent pads and boom.



16. Wed, 7/13/11: Looking NE down at the discharge area from the concrete chamber under the red sided building. Upper center is a concrete raceway for mill water. Other, bricked-up, raceways are also present at far left.



17. Thurs. 7/14/11: Fresh sorbent pads have been laid down; heavy oil sheen again on the river water behind the inner boom. Free oil appeared to be emanating from the 10" diameter drain pipe.



19. Tues. 7/19/11: Looking south from the former Cowan Mill site down at the former Columbia Mill location (Heritage Park) and the oil discharge from to the river from under the former Columbia mill building.



18. Tues. 7/12/11: Looking NE up at the "mystery" out-of-service #6 oil piping coming out of the hillside above the location of the reported #6-oil UST removed in March 2000. Note the dark oil stain on the concrete wall below the pipe.



20. Tues. 7/19/11: There is heavy oil sheen and blobs of free oil behind this inner sorbent boom.



21.

Mon. 8/1/11: On this day little oil was found inside the 10" pipe and I noted oil sheen appeared to be seeping out between joints in the rock wall suggesting the discharge is exiting via the old Columbia Mill raceway. Behind this wall is a chamber, beneath the red FPL shed. The wall is coated with fresh oil despite the power wash on 7/13/11.



Fri.

8/5/11: Looking down into chamber under red shed at brick debris from Columbia Mill demolition.



23.

8/5/11: Swirls and lobes of oil that appear to be seeping from joints in the wall blocks.

Fri.



24.

Fri. 8/5/11: Looking down on oil sheen from Columbia mill retaining wall.



25. Thurs, 8/11/11: Heavy oil sheen on water. Hard 12' boom has been deployed outside of the sorbent boom.



26. Mon. 8/15/11: Morning photos by EPI staff of surface water draining down through ground and out retaining wall. Lewiston-Auburn Water Department was flushing their water lines into the parking lot above.



27. Mon. 8/15/11: Morning photos by EPI staff of several thousands of gallons of water being flushed by L-A Water Dept. draining into the test pit locations. Photo by EPI staff.



28. Mon. 8/15/11: Water and #6-oil droplets being flushed out of rock wall into Androscoggin River by the water from the L-A water Department; significantly more oil than before. Photo by EPI staff.



29. Mon. 8/15/11: Photo by EPI staff, heavy oil sheen and droplets flushed into the river.



30. Mon. 8/15/11: Photos by EPI staff. Blobs of black oil being washed into the river and creating a heavier than normal oil sheen.



31.

Mon. 8/15/11: Photo by EPI staff, of heavy oil sheen and droplets flushed into the river.



32.

Tues. 8/16/11 MDEP photo showing a significant increase in oil seeping out with most all I noted coming out of cracks between the granite blocks rather than out the pipes and penstock outlet. Sorbent pads laid yesterday have been supplemented by fresh pads. Compare this with photos 17 and 23 above.

33.



Tues. 8/16/11: Black oil seeping largely out of the joints between the granite blocks right (south) of the 15" clay pipe. Recent rain may have added to the water system flushing of the previous day. During very high water levels in the river we suspect that the water pressure inhibited the oil from seeping out and may have acted to recharge groundwater table.



34. Thurs. 8/11/11: TP-1 Excavating Test Pits, representative fill encountered consisting of bricks, coal ash, pieces of concrete, pipes and machinery parts. TP-1 hit refusal at 4' bg.



35. Thurs. 8/11/11: Test pits TP-2 showing soil profiles. In left photo is a concrete slab or footer to the left side. No oil found on groundwater at 17' below grade. TP-2 and TP-3 merged into one large test pit.



36. Thurs. 8/11/11: In the center is so black/gray wet ash material that looked like black oil though was water soluble and not sticky like oil.



37.

Thurs. 8/11/11: **Test pit TP-3**, east of the red shed, dug down between two vertical walls of concrete that were loose, a concrete shelf-like footer is visible. Black coal ash but no oil found and no penstock or pipes into the chamber under the shed.



38.

Thurs. 8/11/11: Looking down into TP-3 with TP-2 to the left being filled in. At upper right is the post Columbia Mill red shed; visible below the shed is the concrete chamber that a Columbia Mill penstock appears to have fed into. This chamber is where the #6-oil is leaking out of and through the stone retaining wall into the river. No piping or evidence of oil contamination was found in these test pits.

John Cressey of Summit Env. was concerned about PAH levels found in the ash.



39.

Thurs. 8/11/11: Continuing TP-

3 to the right (north) on the east side of the chamber through brick debris.



40.

Thurs. 8/11/11: Digging through ash and brick.



41.

of the penstock chamber.

Thurs. 8/11/11: Test Pit TP-3, Excavating on the east side



42.

into the excavation. Black coal ash was noted. Groundwater at 17' bg appeared to have an oil-like sheen, but no free oil like that seeping into the river or like what was found in test pits TP-5 and TP-6 to the east.

Thurs. 8/11/11: Down



43. Thurs. 8/11/11: A fence was taken down and TP-4 in the former penstock being excavated. The stone wall in the background is the former NW wall of the Columbia Mill with the former Cowan Pond and Libbey Mill penstock on the other side.



44. Tues. 8/16/11: the apparent penstock route along the north wall of the Columbia Mill building into the chamber under the red shed. Peering down under the shed we could see into the upper chamber clogged with brick debris.



45. Thurs. 8/11/11: Soil within Test Pit TP-4, the apparent old penstock route under the Columbia mill building.



46.

Thurs. 8/11/11: TP-4 with the deeper of the two concrete structures that appeared to be pipe (penstock) cradles going into the chamber under the red building. The grade of the pipe and water flow direction is denoted by the dashed arrow. Note the brick debris common the all the test pits in this area.



47.

scraped bedrock bottom at about 15' bg in TP-4.

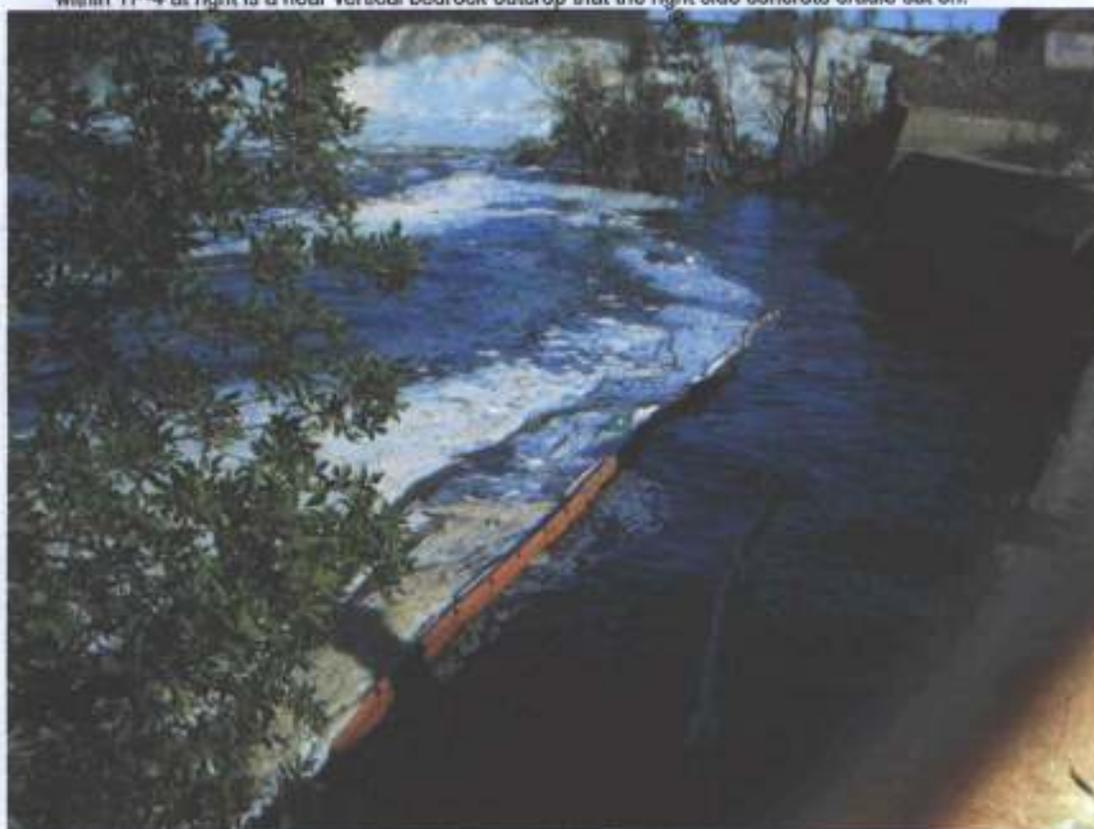
Thurs. 8/11/11: The excavator



48.

within TP-4 at right is a near vertical bedrock outcrop that the right side concrete cradle sat on.

Thurs. 8/11/11: At



8/29/11: High river

water in the oil-seep area below retaining wall with little sheen in the river, it is suspected that water 4' to 8' higher than in July acts to recharge groundwater inhibiting oil from seeping out.



59.

Mon. 10/17/11:

Boring Test Boring TB-5 with TB-4 the next boring in the background. TB-4 came up with 6-oil saturated soil and had refusal (bedrock) at 22.5'; while TB-5 encountered refusal at 4.5' at what appeared to be scrap metal. TB-11 is located 5' to the right (east) of TB-5 had no evidence of oil, though TB-12 located 10' east of TB-5 had oil odor but no free product oil.



60.

Mon. 10/17/11: Oil-

contaminated soil on auger stems from the area of TB-14 located next to the retaining wall.



61.

Mon. 10/17/11:

Boring TB-14 located at lower right corner of the photo with the four auger stems, the stem in the foreground has sticky oil-saturated soil believed to be from the 17' to 25' zone below grade (bg). Bedrock refusal in TB-14 was noted at 27' bg. A soil sample from the drill stem was measured to have 3.1-ppm "qualitatively similar to #6 Fuel Oil" (Analytics Environmental Laboratory).

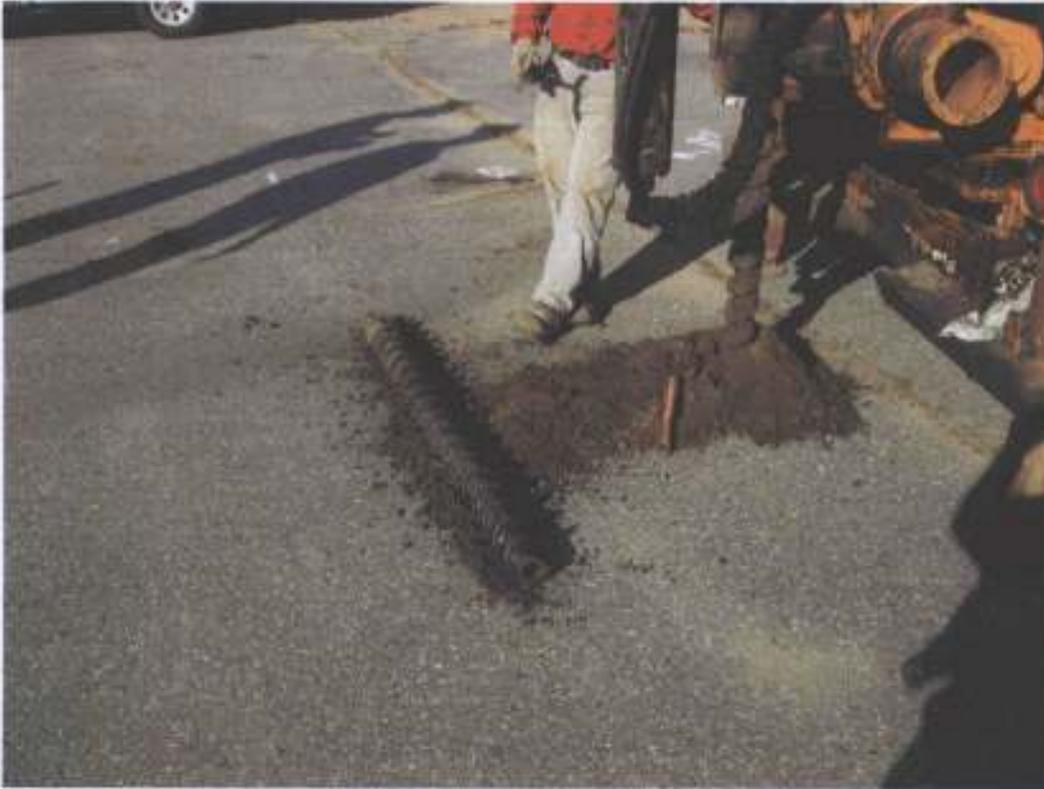


62.

Mon. 10/17/11: Looking east, drilling of TB-21 which hit refusal at

27.2' bg and an oil-saturated zone between 13' to 27' bg. [Groundwater fluctuation due to seasons and river level appears to have created a large smear zone for the oil contamination.]

TB-16 in the foreground hit refusal at 28.9' bg and was oil-contaminated from 18' down to 25' bg but contained less free oil-saturation than TB-4, TB-21 and TB-17.



63.

Mon. 10/17/11: Drilling

TB-24 in the center of the parking lot, TB-23 is in the background. Refusal was encountered at 21.3' bg; oil-saturated soil was noted below 13' bg.

In TB-23 we encountered refusal at 17.2' bg and no oil-contamination. A lab sample from TB-22 located to the east by TP-6 was measured to have 9.9-ppm "qualitatively similar to #6 Fuel Oil"



64.

Mon. 10/17/11:

Preparing to drill TB-26 or TB-27 on City of Lewiston property and just west of monitoring well BR-2. TB-26 encountered soil with an oil odor but no oil-saturated soil. TB-25, TB-26 and TB-27 encountered refusal (bedrock) at 11.5' bg, 12.9' bg, and 10' bg respectively. BR-2 drilled on 9/20/11 (located behind the drill rig in this photo) went through the silt-clay layer encountered in the test pits and found #6-oil saturated soil below the clay and atop bedrock. Free-product oil was noted on the bedrock surface at 12.3' bg. BR-2 was drilled into bedrock to 24' bg.



59. over borings area.

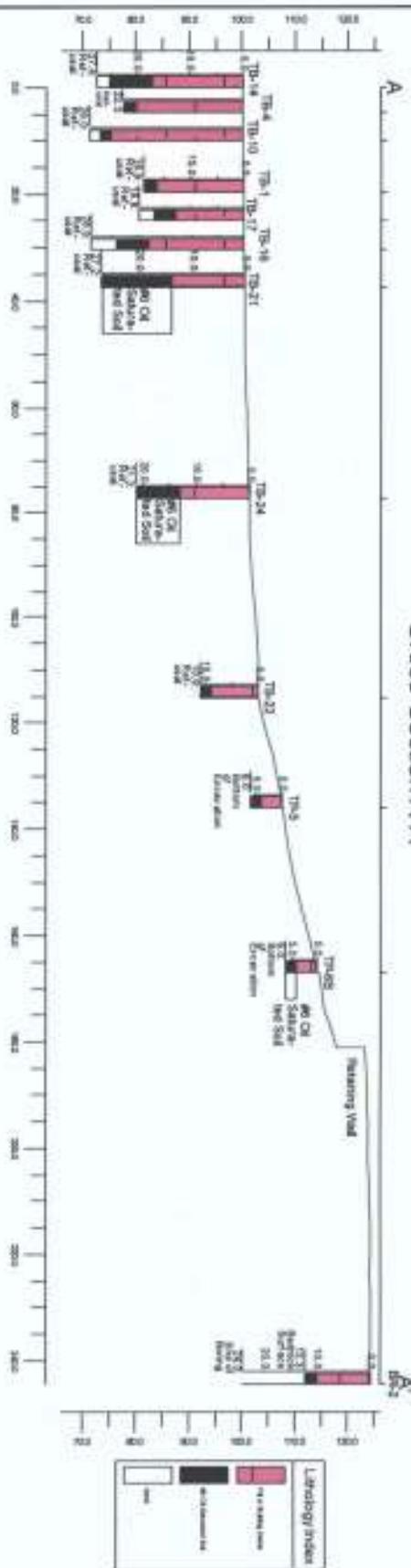
11/2/11: Looking N



60. east over borings toward the CMP Lewiston Steam Plant facility.

11/2/11: Looking

P-541-11 TEST BORING DATA



- #6 OIL SATURATED SOIL
- MONITORING WELL
- SOIL BORING
- TEST PIT
- SMALL, PALE SAMPLE LOCATIONS INDICATE ABSENCE OF #6 OIL SATURATION.

#6 OIL INVESTIGATION AT THE FORMER COLUMBIA MILL

P-534-2011

Mil Street, Lewiston

September 2011

Prepared by Mark Woodhuff
Maine Certified Geologist, GE503
Maine DEP, BRWM
Division of Technical Services



P-534-11 TEST BORING LOG

10/17/11 Mon.

Onsite 0750, Tray soon. GNDrilling onsite 0810.

WX: sunny cool, clear. River level high & over pipes
I marked out 20' grid w/ 5' marks

- TB-2: 14.8' bg, hit refusal. Dark ash, no oil
 - TB-3: 2.6' bg bit hand metal^{1/2} could not drill thru.
not rebar on thick oil tank shell.
Move over to next 5'
 - TB-4: refusal @ 22.5', smooth drilling. Ash soil @ 8-10' bg. Black oil sat. soil, groundwater. sample
 - TB-5: 4.5' hit metal, scraps, could not get thru.
 - TB-6: closer to wall, 1' away. Black ash found, wet down to 28' bg. No LNAPL.
 - TB-7: moving back between # 2 and # 3. About 4.5' to 5' bg. hit rock refusal, stopped; moving closer to wall.
 - TB-8: Down to 20' bg, thru coarse ash, no serious refusal. No oil. (Odor of oil but that leftover on auger?)
 - TB-9: 16' to bedrock. No oil
- If hit a clay pipe they would notice void space. If auger hit ~~pipe~~ iron pipe like 15" it could deflect around the pipe but not tell if rock or pipe
- TB-10: Now working around known oil between TB-1 and TB-4. 29' to refusal, smooth drilling. Coarse ash again, very wet. Oily. Troy and driller think gw @ 15' perhaps and where oil is.
 - TB-11: Smooth drilling. At 15' damp, dark ash, no oil. Refusal @ 19.5' no oil or odor.
 - TB-12: Down to 18.2', oil odor on wet ash soil. No LNAPL.

TEST BORING LOG

10/17/11

- TB-13 @ 1140 hrs: To north of TB-1. Refusal @ 14.4' bg. (TB-1 was 18.9' bg) No oil.

- TB-14: @ 1200, (west of TB-3 which was refusal shallow, 1' from wall. Looking for oil pathway N-S along wall. 17'-25' oiled zone, bedrock @ 27' bg. (Samples)

[River level 12' below parking lot, up from 17' bg in August, Recharging back into soil from river?]

- TB-15, east of TB-1 @ 1230. 24.2' to bedrock, no oil, no odor

- TB-16: south of TB-15, SE of TB-1. @ 1250 hrs time. 28.9' to bedrock. Smooth drilling. Contam. \approx 18-24' but not much LNAPL.

TB-17: @ 1315 hrs, south of TB-1. To 19.8' bg. to bedrock. oil about 13' to 17' smear zone. oil trending SE toward Water Dept. building

- TB-18: To 18.7', coarse ash, no oil

1345 hrs: PWD Dave Jones, I ~~visited him~~ ^{briefed him} on borings. oil trending south direction.

- TB-19 to 14.8' bg. (boulder??) Ash, no oil.

TB-20: @ 1400 hrs to 16.5' bg. No oil.

TB-21: Down to 27.2', east of TB-16. LNAPL and oil-sat. soil (Photo) Oil saturated \approx 13' down to 27' bg.

TB-22: On east side of lot closer to CMP, below slope. Very wet soil. 10.9' to bedrock. LNAPL and saturated \approx 9' bg. Samples. Down from TP-5

TB-23: Middle of parking lot between #21 and #22. refusal @ 17.2', dry sand, no gw or oil.

TB-24: 21.3' to refusal, oil sat. soil @ 13' and below, gw.

TB-25: at 1540 hrs by CMP west of MonH. well BR-2 Refusal @ 11.5' bg, encountered clay. No oil

TB-26: 12.9' to refusal. Oil color but no LNAPL.

TB-27: To 10' bg. No oil.

Lewisford

P-534-11

Columbia Mill