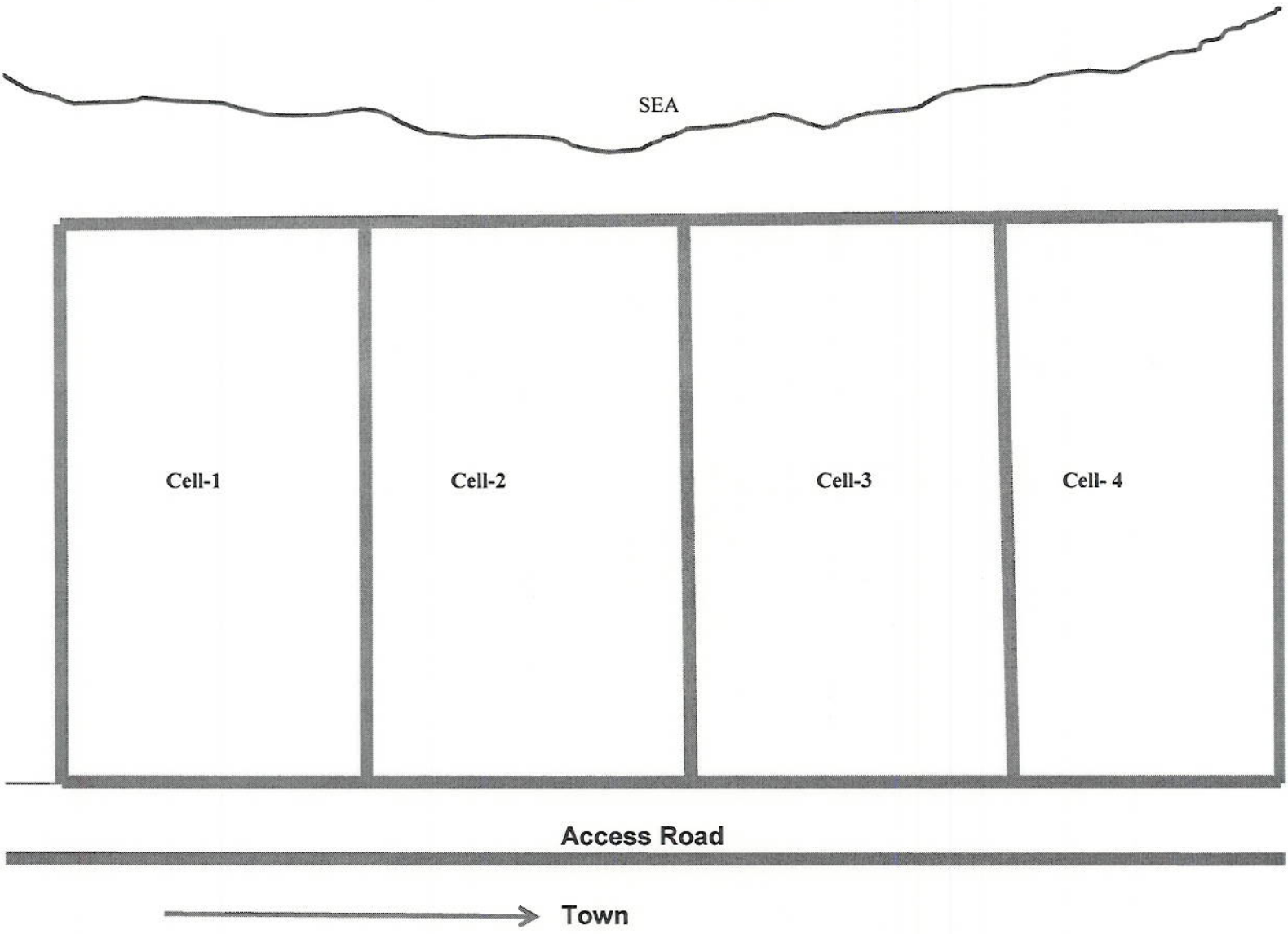
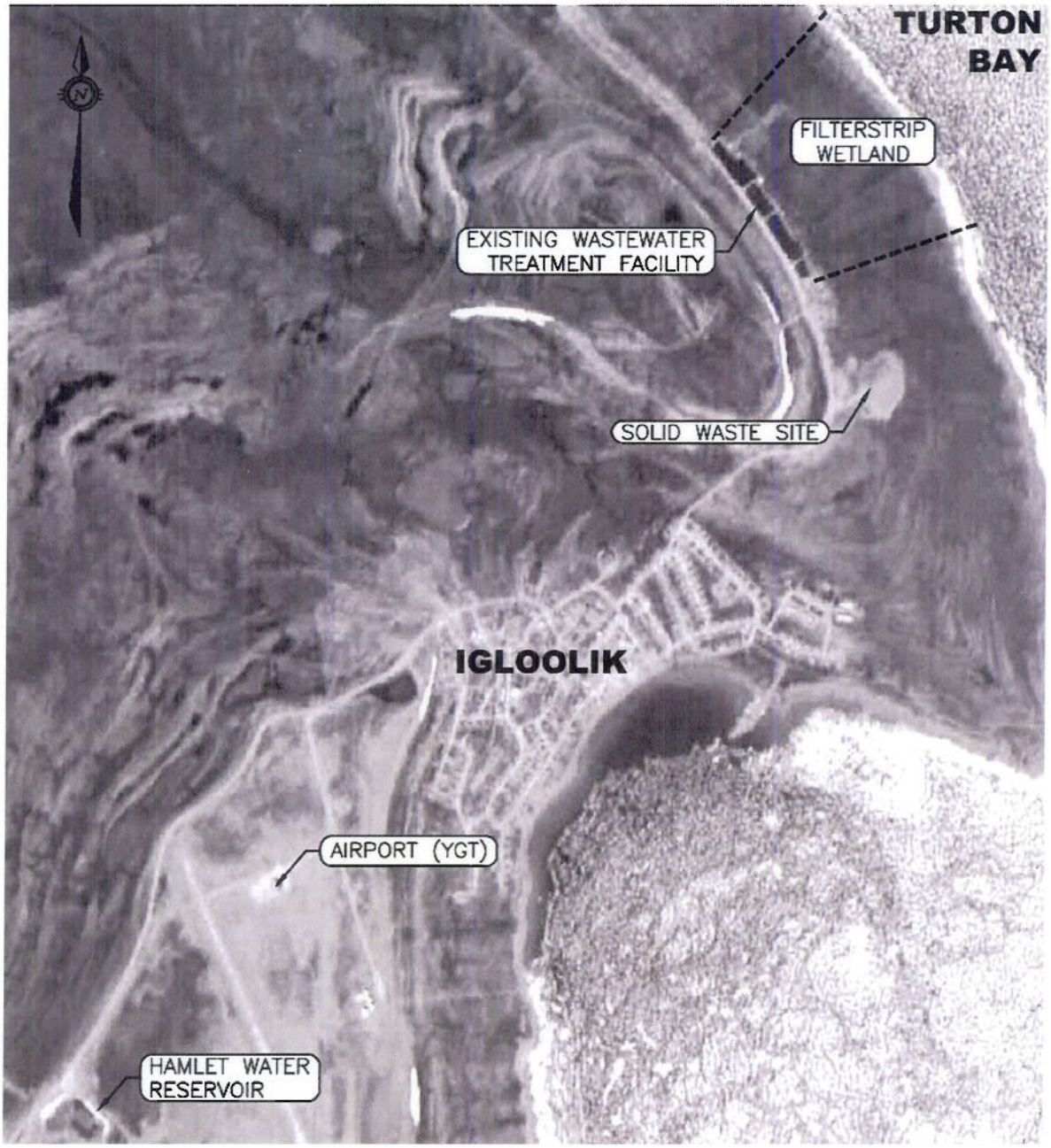
APPENDIX-A

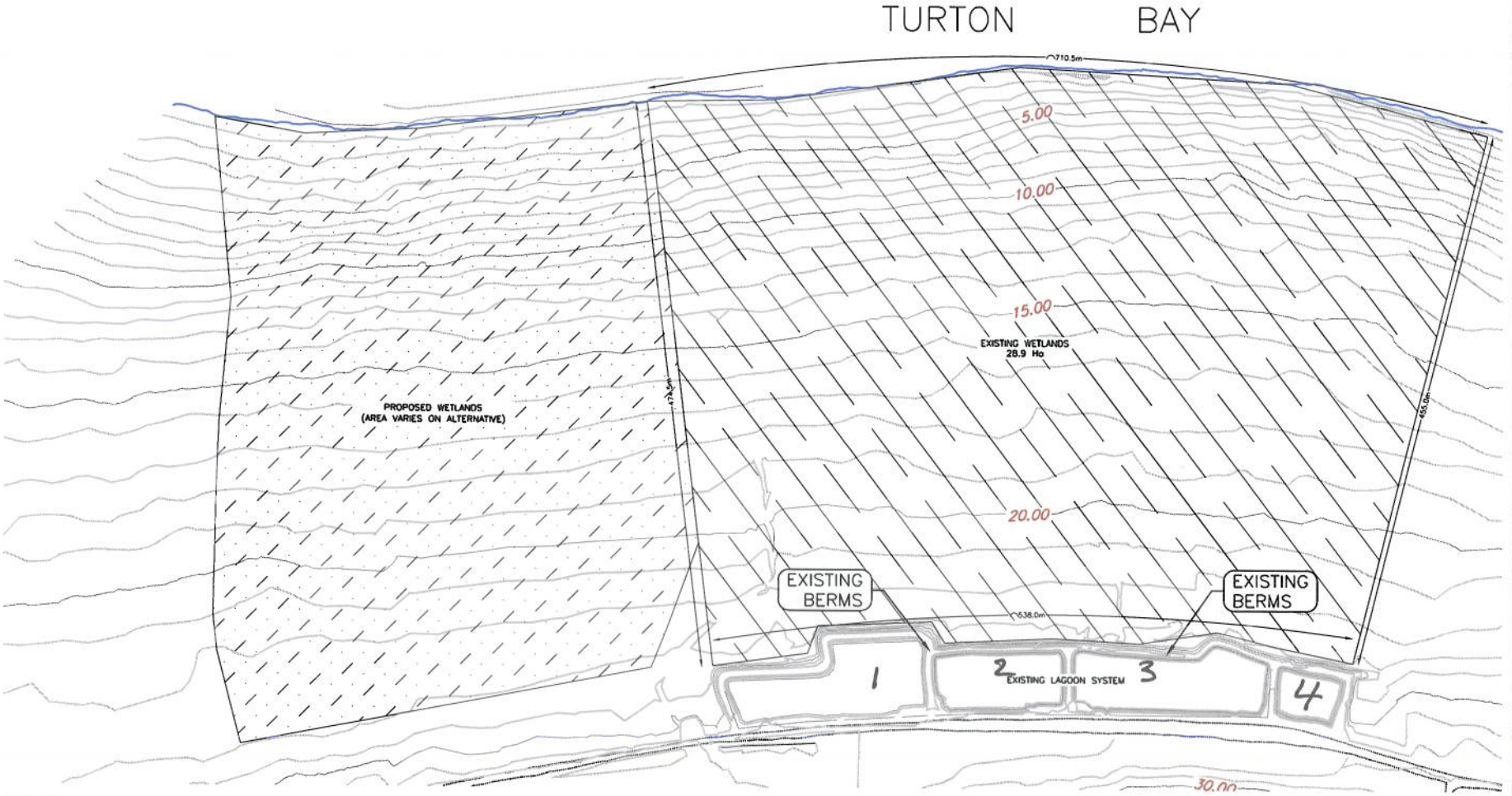
MAP AND LOCATION OF THE EXISTING SEWAGE LAGOON



Note: The annual operational cells are 1, 2 &3. The Cell 4 is the oldest cell and used in case of emergency.

Figure 1-1: Location Plan





Existing Lagoons.

exp Services Inc.
t: +1.613.688.1899 | f: +1.613.225.7330
2650 Queensview Drive, Unit 100
Ottawa, ON K2B 8H6
Canada
www.exp.com
The new identity of Trow

scale: 1:5000	CLIENT: HAMLET OF IGLOOLIK	project no.: OTCD00019838
date: JUNE 2010	TITLE: WETLANDS	FIG 3-2
drawn by: MJT		

APPENDIX-B:

SPILL REPORTING FORM

Northwest Territories | Nunavut | Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR	REPORT NUMBER
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME	☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	____-____
C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS			

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC	SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN	FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. **Please do not fill in the Report Number**: the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number /Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. **You must include the geographic coordinates** (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. **Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.**
G. Contractor involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m^2)
J. Factors Affecting Spill	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. **Please number the pages to ensure that recipients can be certain that they received all pertinent documents.** If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	**Leave Blank**. This box is for the **Spill Line's use only**.

APPENDIX-C:

DUST CONTROL PROCEDURE

Calcium Chloride in Dust Control Applications

Still the Most Effective Dust Control Agent

Why is dust control important?

- Road officials must contend with higher maintenance costs because a dusty road is a deteriorating road. Once the fine material is lost, the load-bearing aggregate will soon follow. Loss of fines and aggregate results in ruts, potholes and washboards that require costly spot repairs and frequent bladings to keep the road in acceptable condition.
- Road users face the serious safety issue of reduced visibility and also the prospect of loose gravel causing cracked windshields, chipped paint and/or broken headlights.
- Local residents must contend with large quantities of dust drifting into their living environment, reducing their quality of life and increasing their chances of developing respiratory health problems.

Why use calcium chloride for dust control?

- Calcium chloride attracts moisture from the air, keeping the road damp even under hot, dry conditions. The moisture film provides a cohesive force that binds aggregate particles together, resulting in a hard and compact surface.
- A beneficial residual effect accumulates with consistent application year after year. As calcium chloride becomes established deeper in the road base, stability improves and frost damage is prevented.
- Calcium chloride manufactured by Dow has been used for dust control applications since the early 1920's. No other dust control product or manufacturer comes close to this level of proven performance.

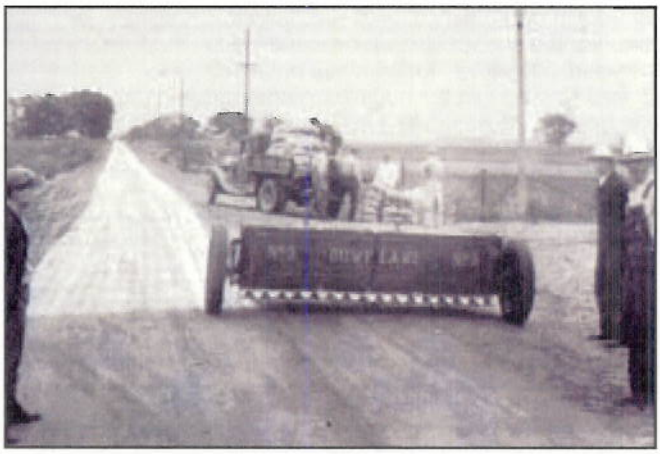
How can road managers with tight budgets justify expenditures for dust control with calcium chloride?

Several years ago, road managers in South Africa asked this question and subsequently launched a series of field trials to collect the necessary data to develop an answer.[1] Here are some of the results from their work.

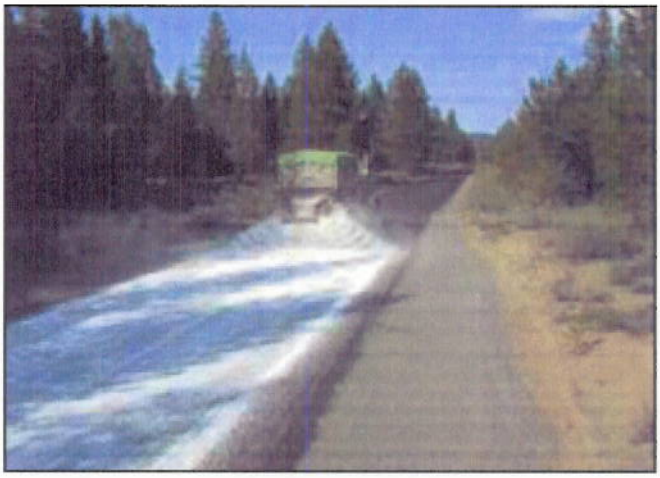
- Blading frequency of roads treated with calcium chloride decreased by about 50% and the expected interval between re-graveling increased from 7 to 14 years.
- A cost/benefit analysis of various maintenance alternatives for a road with 342 ADT indicated that annual application of calcium chloride with a 90 day blading cycle maximized the economic benefits for road managers and road users.
- The greatest economic benefits were realized when aggregate replacement costs and ADT are both high.

This work shows that a dust control program with calcium chloride can be considered an investment that provides a good rate of return, in addition to improving the quality of life for road users and neighbors alike.

That was then...



This is now...



Suggestions for Effectively Using Calcium Chloride in Dust Control

- Blade in the spring, while road moisture content and humidity are relatively high. Water road surface prior to blading unless rain has fallen within the last two days. Remove ruts, washboards, potholes and mix in loose aggregate.
- Good drainage is essential to good performance. Shape roads to a 4% or greater crown. Ditches, shoulders and culverts should be reshaped and cleaned as needed.
- Recommended application rates are provided in Tables 1 and 2. When applying solid products, it is usually preferable to water the surface prior to spreading the product. If the road is kept open to traffic while solid product remains on the surface, signs should be posted directing motorists to take appropriate precautions.
- Applications should not be started during heavy rainfall or if rain is threatening.
- For best performance, aggregate should meet the criteria shown in Table 3.
- During unusually long periods of hot, dry weather, water the road surface during early morning hours as needed to reconstitute the treatment. Re-apply in late summer or early fall as needed.

Frequently Asked Questions

Will an unpaved road treated with calcium chloride corrode my vehicle?
Noticeable vehicle corrosion is not likely to result from driving on an unpaved surface treated with calcium chloride. The calcium chloride tends to stay bound to the soil in the road, so there is little chance for significant contact with exposed metal on a vehicle.

Are dust control treatments with calcium chloride safe for the environment?
Calcium chloride dust control applications reduce sediment load on waterways and save thousands of tons of aggregate that otherwise would be mined from noisy and unsightly gravel quarries. Airborne particulate matter is reduced, improving regional air quality. Ground and surface waters are not likely to be impacted. While over-exposure to chloride has the potential to injure trees, this rarely occurs in dust control applications that follow current standard practices.

Table 1. Dust Control Application Rates (US Units)

Product	Unpaved Roads	Truck Terminals & Parking Lots	Mine Haul & Logging Roads
LIQUIDOW™ 35%	0.30 gal/yd² 2117 gal/lane-mi	0.33 gal/yd² 2352 gal/lane-mi	0.39 gal/yd² 2744 gal/lane-mi
LIQUIDOW 38%	0.27 gal/yd² 1901 gal/lane-mi	0.30 gal/yd² 2112 gal/lane-mi	0.35 gal/yd² 2464 gal/lane-mi
LIQUIDOW 42%	0.24 gal/yd² 1664 gal/lane-mi	0.26 gal/yd² 1849 gal/lane-mi	0.31 gal/yd² 2157 gal/lane-mi
DOWFLAKE™ 77-80%	1.50 lb/yd² 5.28 ton/lane-mi	1.70 lb/yd² 5.98 ton/lane-mi	2.00 lb/yd² 7.04 ton/lane-mi
DOWFLAKE™ Xtra 83-87%	1.38 lb/yd² 4.84 ton/lane-mi	1.56 lb/yd² 5.49 ton/lane-mi	1.83 lb/yd² 6.45 ton/lane-mi
ANHYDROUS 94-97%	1.23 lb/yd² 4.33 ton/lane-mi	1.39 lb/yd² 4.90 ton/lane-mi	1.64 lb/yd² 5.77 ton/lane-mi

*lane-mi equals 4 yards wide by 1760 yards long

Table 2. Dust Control Application Rates (Metric Units)

Product	Unpaved Roads	Truck Terminals & Parking Lots	Mine Haul & Logging Roads
LIQUIDOW 35%	1.36 liter/m² 5027 liter/lane-km	1.51 liter/m² 5604 liter/lane-km	1.76 liter/m² 6511 liter/lane-km
LIQUIDOW 38%	1.22 liter/m² 4514 liter/lane-km	1.36 liter/m² 5032 liter/lane-km	1.58 liter/m² 5846 liter/lane-km
LIQUIDOW 42%	1.07 liter/m² 3951 liter/lane-km	1.19 liter/m² 4404 liter/lane-km	1.38 liter/m² 5116 liter/lane-km
DOWFLAKE 77-80%	0.81 kg/m² 3.01 tonne/lane-km	0.92 kg/m² 3.41 tonne/lane-km	1.09 kg/m² 4.01 tonne/lane-km
DOWFLAKE Xtra 83-87%	0.75 kg/m² 2.76 tonne/lane-km	0.85 kg/m² 3.13 tonne/lane-km	0.99 kg/m² 3.68 tonne/lane-km
ANHYDROUS 94-97%	0.67 kg/m² 2.47 tonne/lane-km	0.76 kg/m² 2.80 tonne/lane-km	0.89 kg/m² 3.29 tonne/lane-km

*lane-km equals 3.7 meters wide by 1000 meters long

Table 3. Recommended Aggregate Characteristics

Characteristic	Preferred	Acceptable
Maximum Size	3/4 inch	1 inch
Grading Description	Well graded - not uniform or skip graded	
Percent Pass #4	55 to 70	50 to 75
Percent Pass #200 (Nonplastic)	14 to 17	12 to 17
Percent Pass #200 (Plastic)	12 to 15	8 to 15
Plasticity Index	2 to 9	Nonplastic
Los Angeles Abrasion	Less than 30	Less than 40
Percent Fracture, one face	Greater than 85%	Greater than 75%

Additional Information

To ensure the safe and effective use of Dow calcium chloride, please thoroughly review the product's Material Safety Data Sheet prior to use. To obtain an MSDS, contact the Customer Information Group at 1-800-447-4369 or visit the Calcium Chloride web site www.dowcalciumchloride.com.

[1] "The Incorporation of Dust Pallaitives as a Maintenance Option in Unsealed Road Management Systems." D. Jones, E. Sadzik, and I. Wolmarans; Paper from 20th ARRB Conference, 19-21 March 2001

Published September 2006.

Form 173-01741-0906QRP